



<http://www.rois.ac.jp>

Inter-University Research Institute Corporation

Research Organization of Information and Systems

National Institute of Polar Research

National Institute of Informatics

The Institute of Statistical Mathematics

National Institute of Genetics

Transdisciplinary Research Integration Center

Database Center for Life Science

Academic Challenges in the Information Era

Establishment of New Scientific Methodology & Development of New Research Areas

With the rapid development of information and communications technology, the modern society in which we live is experiencing unprecedented change. Progress in information technology in the late 20th century heightened the value of information to a level equal to that of materials and energy, establishing an information society. Currently, it has progressed to the level where enormous volumes of information can almost automatically and instantaneously be obtained in almost every sphere of society, not just in the areas of scientific and technological research. As a result, it seems that the cliché about quantity evolving into quality has become a real possibility as the advent of the ubiquitous society is increasingly a reality and both the social systems and the course of science and technology have changed significantly. In the world of science and technology, computation has now been established as the third scientific methodology, next to theory and experiment, and the need for the establishment of data-centered science, the so-called “fourth science,” is already upon us.

With the incorporation in 2004 of the Inter-University Research Institutes, the Research Organization of Information and Systems

(ROIS) was established to bring together the National Institute of Informatics, the Institute of Statistical Mathematics, the National Institute of Genetics and the National Institute of Polar Research for the purpose of capturing and analyzing, from the perspective of information and systems, various of the complex phenomena encountered in modern society. The institutes, backed by their research communities, harness their own special features and promote cutting-edge research from their unique standpoints, attempting to construct new research paradigms and open up new research areas in fulfillment of the Organization’s mission. ROIS will further strive to strengthen its joint use and joint research functions as an inter-university research institute paying due attention to the characteristics of each area of study. For graduate school education, the third mission of an inter-university research institute, ROIS functions as the core organization behind the Graduate University for Advanced Studies, training human resources to lead academic research in a new age.

We hope that you will continue to support and encourage the Research Organization of Information and Systems as it pursues a new era of academic research.



Inter-University Research Institute Corporation
Research Organization of Information and Systems
President **Genshiro Kitagawa**

Philosophy of the Research Organization of Information and Systems

The Research Organization of Information and Systems establishes and operates a core research institute for promoting integrated research on a global level in the areas of polar sciences, informatics, statistical mathematics, and genetics, in collaboration with the research communities at universities and other organizations all over Japan. The Organization also aims to conduct integrated research across disciplines by addressing, from the perspectives of information and systems, issues involving complex phenomena of life, Earth, the natural environment, human society, and other areas, as critical issues for the 21st century. To achieve this, a central organization has been established to facilitate integrated research, and will attempt to construct a new research paradigm and to open up new research areas, again adopting an information and systems perspective. Also, by offering an information platform that supports the speedy and effective development of research at universities and other academic research institutes in Japan and overseas, the Organization seeks to raise the level of research in Japan.



CONTENTS

Greetings from the President/ Philosophy of the Research Organization of Information and Systems	2
--	---

[Outline]

What are Inter-University Research Institutes?/History	4
---	---

[Institutes]

National Institute of Polar Research (NIPR)	6
National Institute of Informatics (NII)	8
The Institute of Statistical Mathematics (ISM)	10
National Institute of Genetics (NIG)	12

[Affiliated Centers]

Transdisciplinary Research Integration Center	14
Database Center for Life Science	16

[Education]

Cooperation with the Graduate University for Advanced Studies	18
--	----

[Public Relations and Communication]

Public Relations and Communication	20
--	----

[Organization]

Organization Chart	22
General Planning Office/ Intellectual Property Center	23
Data	24
Board of Directors/Management Council/ Education and Research Council/Membership	25
Accounting/External Funds/Number of Institutions and Joint Researchers Enrolled in Inter-University Joint Research Projects/Special Inter-University Researchers	25
Location	26

What are Inter-University Research Institutes?

The Research Organization of Information and Systems takes advantage of the characteristics unique to inter-university research institutes in engaging in a wide range of activities. These include Antarctic observation, operation of the Science Information Network (SINET), database construction and integration, provision of information on biological resources and genomes and joint research based on networks. These examples may appear diverse and inconsistent, but the inter-university research institute concept unites them. What, then, are inter-university research institutes all about?

Inter-University Research Institutes are unique research organizations in Japan that seek to promote joint research across disciplines among universities. The institutes offer large-scale and cutting-edge facilities, large volumes of academic data, and valuable materials, which a single university would find it difficult to create and maintain, making them available free of charge to researchers in Japan as institutes shared by universities in different disciplines.

The first Inter-University Research Institute was formed in 1971, and today there are 17 of them. They play an essential role in facilitating rapid progress in research and in responding to demands from research communities to reorganize research institutes affiliated with national universities.

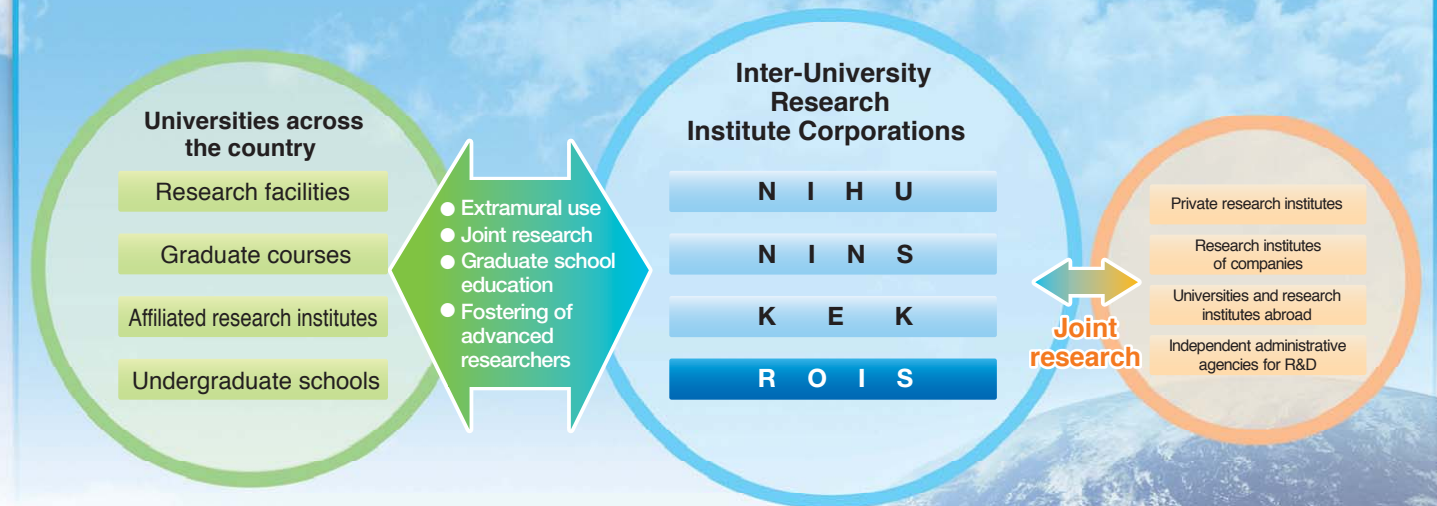
Each of the institutes has undertaken joint research by pooling the wisdom of nationwide researchers, as the core

base of their respective research area. At the same time, the institutes have represented Japan at numerous international conventions, and have served as the organizers of research communities.

In 2004 the Inter-University Research Institutes were reorganized under four independent institutes, pursuant to the National University Corporation Act. Each of these institutes is charged with reinvigorating research in an independent environment, facilitating strategic action to enhance inter-university use and research functions, while creating new research areas.

Since they were established as explained above, inter-university research institutes are operated in collaboration with communities of researchers, particularly with universities. With a unique perspective based on the concept of information and systems to cover a wide variety of research disciplines, the Research Organization of Information and Systems networks more than 700 universities and research institutes. It builds and offers to researcher communities a large-scale database to pave the way for joint research using huge volumes of data, contributing to the development of academic studies. As an Inter-University Research Institute Corporation, it will continue to act as an academic research body comparable to universities that addresses the pursuit of truth and aims to create knowledge based on researchers' free thinking while supporting university-led academic research.

As "Centers of Excellence" in Japan



【Functions of Inter-University Research Institute Corporations】

1 Cutting-edge research

Conducting their own cutting-edge research based on researchers' free thinking

2 Joint use and joint research

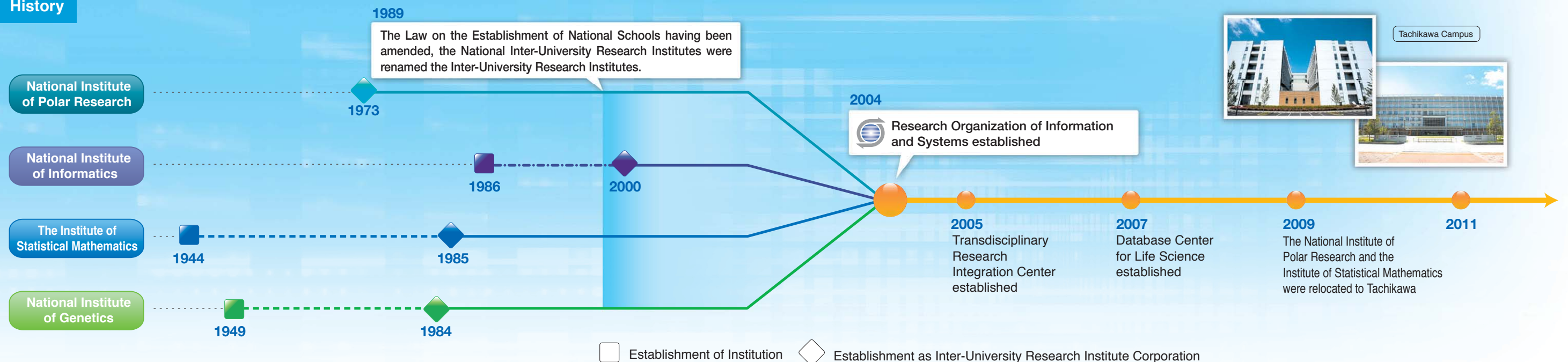
Serving as centers for different academic disciplines to provide research opportunities for researchers across the country while responding to the ideas and opinions from researcher communities

3 Graduate education

Taking advantage of the leading-edge research environment to accept graduate students and cooperate in the development of human resources that will play active roles in the next generation as the fundamental institution behind the Graduate University for Advanced Studies



History



National Institute of Polar Research (NIPR)

Investigating the earth's system through the Antarctic and the Arctic

The National Institute of Polar Research (NIPR) was established in 1973 as an Inter-University Research Institute to pursue integrated research and to conduct observations in the polar regions. Since then, based on field observations in the Antarctic and the Arctic and using the results of modeling and data and sample processing, the NIPR has been promoting joint research with a view to developing an advanced earth system science that includes earth science, environmental science, solar-terrestrial system science, space and planetary science, biological science, etc.

As well as being responsible for scientific observation and logistics in the Japanese Antarctic Research Expedition (JARE), which is overseen by the JARE headquarters within the Ministry of Education, Culture, Sports, Science and Technology, the NIPR also plays a principal role in Japanese Arctic research with regard to managing the observational facilities, supporting field research, disseminating information, and dealing with international relations.



Showa Station

Polar science as part of earth system science

Nature in the polar regions of the Antarctic and the Arctic is an interrelated system consisting of space, the magnetosphere, the ionosphere, the atmosphere, the cryosphere, the oceans, the lithosphere, and the biosphere. These components are closely interactive and form a large natural system of their own. The aim of polar science is to elucidate physical, chemical, and biological processes and their interaction as part of the earth's system by utilizing the diverse natural science disciplines dealing with the above components.

Global environmental change from the vantage point of the polar regions

The cryosphere, which consists of the Antarctic ice sheet, glaciers in the Arctic region, and sea ice, plays an important role in the global climate, affecting both the atmospheric and oceanic circulation as the heat sink for the globe. The polar regions are therefore the best place to observe global environmental change because the extent of environmental changes is much enhanced in polar regions by the natural feedback mechanism, the background condition of the earth's environment can be most clearly monitored in the Antarctic, which is remote from human activity, studies on the ecosystem in the extreme polar environment can help develop new viewpoints regarding life and the environment, and the history of the global environment is recorded in the cryosphere.

Polar regions as a window for space and planetary research

The aurora that colors the polar upper atmosphere is a product of the interaction of the solar wind and the earth's magnetosphere, and to study its behavior is so valuable in elucidating the physical process of plasma and solar wind energy entering the magnetosphere and ionosphere that the polar regions are recognized as an important window for research on the upper atmosphere.

The Antarctic is also an indispensable research site for space and planetary science because in this region the meteorites and cosmic dust that form planetary material can be efficiently collected, and cosmic rays and millimeter waves can be received without excessive obstruction from the earth's atmosphere. Thus the Antarctic is a window through which space and the planets can be observed.

Earth's history explored in the Antarctic

Antarctica is a continental crust including a complex dating from about 3.8 billion years ago, implying that it is part of the early continental crust formed on the earth. The Antarctic is the best area for investigating the formation of Gondwana 500 million years ago and its separating process afterward, and the characteristics of the Antarctic plate involved in the formation of the Antarctic ice sheet 40 million years ago. The Antarctic ice sheet has been changed so much since its creation that it has affected sea level change and crustal movement. The study of Earth's history as explored in the Antarctic involves the clarification of various phenomena on the inside of the earth and the surface of the continental crust over the long timespan of 4.6 billion years.



Ice shelf in the Antarctic Ocean



Ice core drilling at Dome Fuji



Auroral observation at Showa Station



Geological survey in the Sør-Rondane mountains

National Institute of Informatics (NII)

Supporting the Foundations of ICT Society as a Core Informatics Research Organization

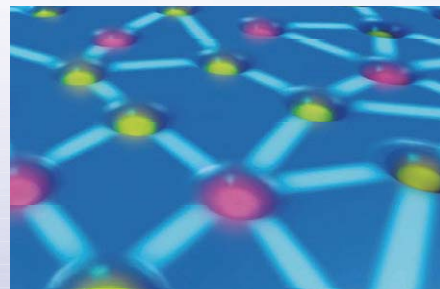
The National Institute of Informatics (NII) is Japan's sole central research institute for informatics. It conducts cutting edge research on information technology, which is now essential in our daily lives, in response to social and academic needs. The NII is also involved in establishing an academic information network for supporting research and education activities at universities and other institutions, and in providing academic content services, such as research paper databases, by creating an academic information base to support academic and research activities across all fields, not only informatics. The NII has already made significant social and international contributions by acting as a central hub for research in informatics through its close ties with organizations in a wide range of fields both within Japan and overseas, including universities, research bodies, and private-sector businesses.



Quantum Information Processing

Future computers known as "quantum computers" will offer the potential of vastly increased computational power compared to current supercomputers. The NII aims to become a world leader in this field by utilizing Japanese technology for quantum information processing, conducting fundamental theoretical and experimental research towards the realization of such devices.

Taking advantage of quantum mechanical properties and through technology developments in safety communication technologies and ultrahigh-precision standard clocks and measuring equipment, quantum information processing is expected to reinvigorate the information communications and semiconductor industries.



The quantum simulator is the best for optimization problem which deal with finding the best solution from all feasible solutions

Each yellow and red dot has two kinds of Bose-Einstein condensates respectively, and every dot itself possesses sufficient information to solve optimization problems (Nikkei Science March 2011)

Top SE Project

The Top SE Project aims to provide world-class software engineering education. It is a year-long program for developing IT engineers and consists of 23 courses in the latest technologies and theories with exercises matched with practical development work, as well as end-of-program projects with individual instruction from lecturers. More than 120 trainees have completed the program, mainly from the 33 sponsoring companies.



A scene from the Top SE Class

Research for Community Knowledge

The NII engages in the development and provision of Researchmap as an information-sharing infrastructure tool for establishing an eco-system* for circulation of academic information in an effort to promote interdisciplinary knowledge-sharing and collaboration. It also develops and offers a one-stop system that enables educational institutions to construct an information infrastructure. Called NetCommons, this is used by many educational and other institutions for school websites, school groupware and teacher training systems.

*A concept according to which reuse of information will eliminate the process of remaking it and which averts the risk of entry errors.



NetCommons – A next-generation information-sharing infrastructure system

Science Information Network

The Science Information Network (SINET) is an information network supporting the research and educational activities of universities and research institutions throughout Japan, and has currently been used by over 2 million people from over 700 member institutions in Japan. Since April 2011, the NII has been operating SINET4, which is an advanced version of the former SINET3. SINET4 provides a range of services and promotes international academic collaboration through interconnections with worldwide research networks.

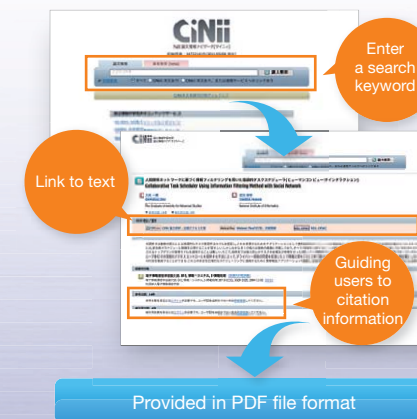


SINET4 Science Information Network

Academic Content

The NII collects and stores information about academic papers, books, journals and other publications and opens it to the public in the form of databases. It also provides a portal for comprehensively searching these. It is widely used not only by universities for education and research but also by the general public.

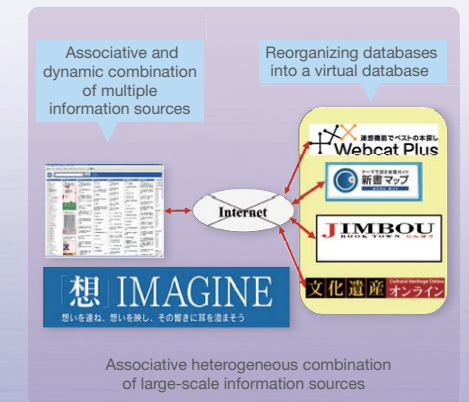
To facilitate the smooth circulation of academic information, the NII promotes open access through the NII Institutional Repositories Program.



Paper search: CiNii – NII Scholarly and Academic Information Navigator
<http://ci.nii.ac.jp>
 Publication search: Webcat Plus
<http://webcatplus.nii.ac.jp/>

Informatics of Association

The NII has constructed an associative computing mechanism that quantitatively evaluates relationships existing in information to provide a service for quickly collecting, sorting and organizing information from a mass of electronic data to motivate users. So-IMAGINE Book Search, Webcat Plus, Cultural Heritage Online, Shinsho Map and JIMBOU are among its services that link cultural memory through the medium of association.



The Institute of Statistical Mathematics (ISM)

Promoting research on the mechanism of data-based rational inference

Extracting information from data forms the basis of such intellectual activities as prediction and knowledge discovery. As our modern information society progresses, enormous amounts of data are being accumulated continuously in many different forms.

The Institute of Statistical Mathematics is promoting research on the mechanism of data-based rational inference within a wide range of diverse fields, such as life science, environment, society and economics. In the face of increasing complexity and uncertainty we aim to create added value in order to meet the growing needs of present-day society, hence improving the valid utilization of data.

Through prediction and knowledge discovery, modeling of uncertainty, risk analysis, data design and investigation, and computational, statistical and fundamental mathematics, we research and develop solutions to a diverse range of problems arising in Japanese science and technology. In particular, we are actively involved in interdisciplinary and cooperative research within and across the boundaries of business and academia.

$$AIC = -2 \sum_{a=1}^n \log f(x_a | \hat{\theta}) + 2p$$

$$GIC = -2 \sum_{a=1}^n \log f(x_a | \hat{\theta}) + \frac{2}{n} \sum_{a=1}^n T^{(1)}(x_a; \hat{G}) \frac{\partial \log f(x_a | \theta)}{\partial \theta} \bigg|_{\theta=T(\hat{G})}$$

$$p\bar{l}_{\delta}(V) = - \sum_{j=1}^N \log \hat{p}_{Cj}(V \kappa_{\omega}(\chi_j)) + \frac{\delta}{2} \text{trace} \Gamma V \kappa_{\omega}^d V^t$$

Composition of the basic research organization

Department of Statistical Modeling

This department studies the modeling of complex causally interrelated phenomena which vary in time and space and of intelligent information processing, as well as model-based statistical inference methodologies.

Group composition

- Spatial and Time Series Modeling Group
- Intelligent Information Processing group
- Graph Modeling Group

Department of Data Science

This department carries out research regarding data design and investigation to cope with uncertainty and incompleteness of information, and data analysis methods based on the advanced use of computers.

Group composition

- Survey Research Group
- Multidimensional Data Analysis Group
- Computational Statistics Group

Department of Mathematical Analysis and Statistical Inference

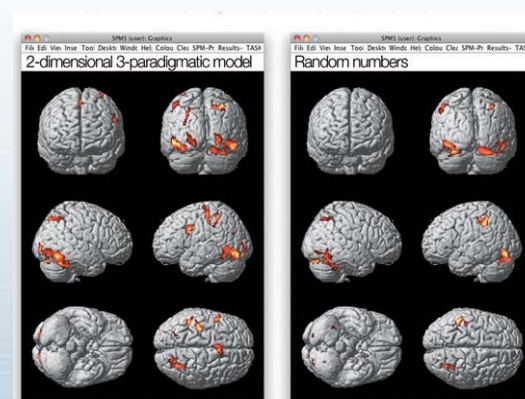
This department studies fundamental statistical theory and statistical learning theory, optimization for statistical inferencing, and the theory and fundamental mathematics of computational algorithms.

Group composition

- Mathematical Statistics Group
- Learning and Inference Group
- Computational Mathematics Group

Collaborative Use and NOE activities

As an Inter-University Research Organization charged with the central role of researching statistical mathematics and its applications, we recruit domestic and foreign researchers and promote solicited cooperative research in the techniques of prediction and knowledge discovery, data assimilation, and investigation technology. From 2004 a strategic research organization was set up in an interdisciplinary way involving researchers from diverse basic research organizations, and NOE (Network of Excellence) activities were started to bring various research organizations to work cooperatively from the standpoint of statistical mathematics. One of the aims of the cooperative research done within the NOE is to train young researchers with a practical bias. As the only domestic full-scale statistical mathematics research organization which also trains researchers, we intend to accelerate NOE-type cooperative research in the future and thus to carry out our responsibility to society.



Difference in cerebral activity according to different algorithms (cooperative research with Jichi Medical University)

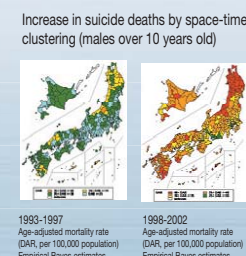
An organization to strategically create an interface between statistical mathematics and cutting-edge technology and real society

Prediction and Knowledge Discovery Research Center (PKDRC)

The Prediction and Knowledge Discovery Research Center aims to create modeling and inferencing algorithms for prediction and discovery to utilize information extracted from the huge data sets created by complex systems, and to develop statistical software based on these algorithms. Additionally, the center aims to solve specific problems in substantial sciences such as genomic, earth, and space sciences.

Risk Analysis Research Center (RARC)

As uncertainty and risks in society increase with the growing globalization of society and the economy, the Risk Analysis Research Center is pursuing a scientific approach to uncertainty and risk, and is also constructing a network for risk analysis to contribute to the creation of a safe and reliable society.

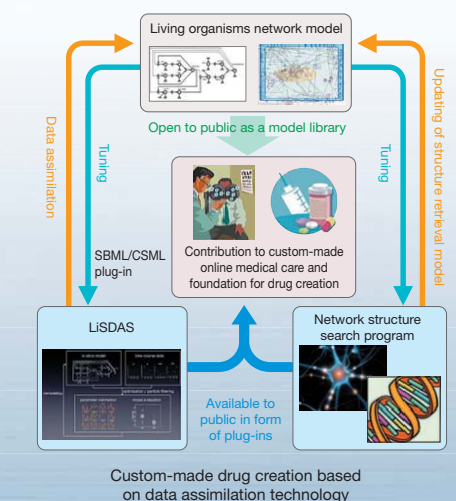


Increase in suicide deaths by space-time clustering (males over 10 years old)



Research and Development Center for Data Assimilation

The Research and Development Center for Data Assimilation studies a computation method that integrates ultra-high dimensional observation and measurement data and a state-of-the-art large-scale simulation model, a method of visualizing high-dimensional data and a method of generating random numbers for predicting phenomena shown by complex global-scale systems with high precision.



Research Innovation Center

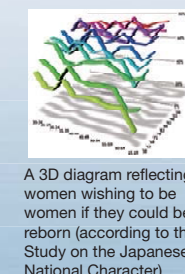
The objective of this center is to develop innovative research in statistical science to keep up with new trends in the academic and real worlds. The center carries out original research projects, ranging over both pure and applied frontiers.

Survey Science Center

Based on over a half-century of achievements in practical social research and studies conducted by the ISM, this center aims to encourage collaboration between relevant universities in Japan and beyond and related governmental, private and academic organizations, as well as encouraging social contributions including human resources development through continued expansion of these achievements and the construction of a nationwide network for research and scientific studies.



Quantification of survey findings on international comparison among seven countries



A 3D diagram reflecting women wishing to be women if they could be reborn (according to the Study on the Japanese National Character)

National Institute of Genetics (NIG)

Exploring life systems through the gene and the genome

The National Institute of Genetics (NIG) was established in 1949, 4 years before the DNA double-helix discovery, as a central institute to study various aspects of genetics. Since then the NIG has produced high-quality research achievements during its 60-year history, overlapping with the recent revolution in the field of life science. Life is a complex system, for which the methodologies of genetics form a powerful exploratory tool: since life is constructed by interactions between genomic information and the internal and external environments, genetics can be said to be the basis of all of life science.

The NIG carries out advanced research as a core institute of genetics in the field of life science, and works to build the necessary intellectual infrastructure to support life science research, promoting collaborative use and research.

Additionally, the Center for Frontier Research was established to develop new areas of research in life science and to further the development of young researchers. The NIG is also in charge of the department of genetics at the School of Life Science in the Graduate University for Advanced Studies, producing the next generation of talented researchers.



At the cutting-edge of life science research

The NIG conducts research to reveal the individual mechanisms of biological systems, in such areas as chromosomes and cells, epigenetics, development and differentiation, reproduction, neuroscience and behavior, genomics and bioinformatics, and evolution and diversity. We are also working toward clarifying the bigger picture of life systems using computer science to deal with large-volume experimental data involving genomic information and gene expression.

<From the Press Release>

Simulation of Genomic Evolution of Plants

Genomic evolution of plants mimicked with DNA hypomethylation mutants of Arabidopsis.



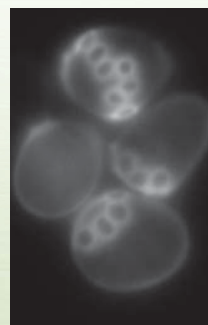
Normal



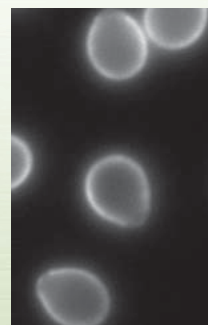
Abnormal

Discovering the rejuvenation mechanism of cells

A system copying junk genes contributing to reset of aging was found using yeast.



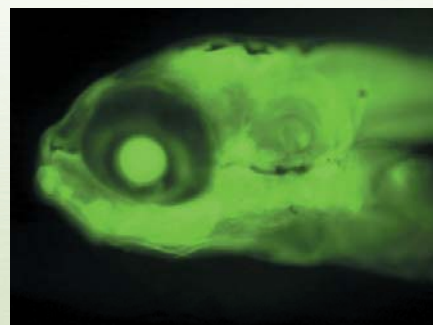
Aged



Rejuvenated

Constructing a system to induce gene expression

Successful development of high-efficiency transgenic and gene expression using transposon in zebra fish.



Transposon-inserted zebrafish

Building the intellectual infrastructure to lead in life science research

The NIG operates the DNA Data Bank of Japan (DDBJ), the Bioresources Project, and the DNA Sequencing Center as their core international base. The NIG supports the scientific community and helps to lead life science research through these organizations in collaboration with other universities and research institutes.



DDBJ Project

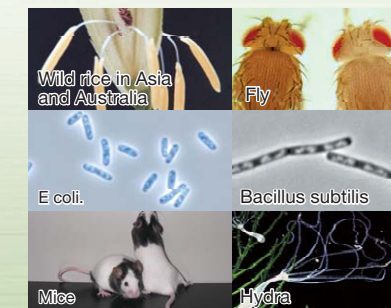
Together with Europe's EBI/EMBL and the U.S.'s NCBI/GenBank, the DDBJ makes up and administers the International Nucleotide Sequence Database (INSD). INSD data can be viewed, downloaded, manipulated, and redistributed regardless of intended applications or national boundaries. The INSD data is a shared resource for all peoples.



Supercomputer

Bioresources Project

NIG serves as a center for developing, collecting, and distributing biological resources of various strains of experimental organisms for academic research. NIG also plays an important role as a central institute for the National BioResource Project and functions as its information center to promote development of biological resource databases in collaboration with universities and other organizations.



DNA Sequencing Project

NIG is the national leader in technical knowhow and success at complete sequencing of multicellular organism genomes. NIG has conducted analyses of genes and genomes of 44 species in collaboration with 29 organizations (universities and research groups). NIG is a key producer of genomic information for academia and science.



DNA sequencer

Transdisciplinary Research Integration Center (TRIC)

Grand design of the Transdisciplinary Research Integration Center (TRIC)

The Research Organization of Information and Systems (ROIS) was established in 2004, integrating four institutes in the Inter-University Research Institute Corporation (IURIC), in order to enhance the activities of IURIC and to produce a new style of cooperative research beyond traditional academic fields. At the same time, the Transdisciplinary Research Integration Center (TRIC) was established within ROIS to carry out the basic plan of the IURIC and create new research fields. TRIC started transdisciplinary research for developing new and original approaches to prediction and knowledge discovery based on data and statistical modeling, and ultimately the creation of new research paradigms. This is achieved by combining vast and varying amounts of experimental and observational data and knowledge about life science and earth science generated by the National Institute of Genetics and the National Institute of Polar Research, statistical modeling and computing technologies developed by The Institute of Statistical Mathematics, and informatics and information infrastructures developed by the National Institute of Informatics.

New research projects of TRIC

In the second phase of operation that started in fiscal year 2010, TRIC has embarked on new projects in the field of Human and Social Systems, in addition to the two fields of Life Systems and Earth Environment Systems carried over from the first phase of operation. TRIC now promotes a total of five transdisciplinary projects in these three fields in cooperation with the Statistical Mathematics Infrastructure and the Information Infrastructure.

TRIC will create action plans for cooperating not only with the four institutes making up ROIS but also with other universities and domestic and foreign institutions, and for implementing those plans.

The two activities of TRIC

TRIC has the following two activities.

1. Transdisciplinary projects

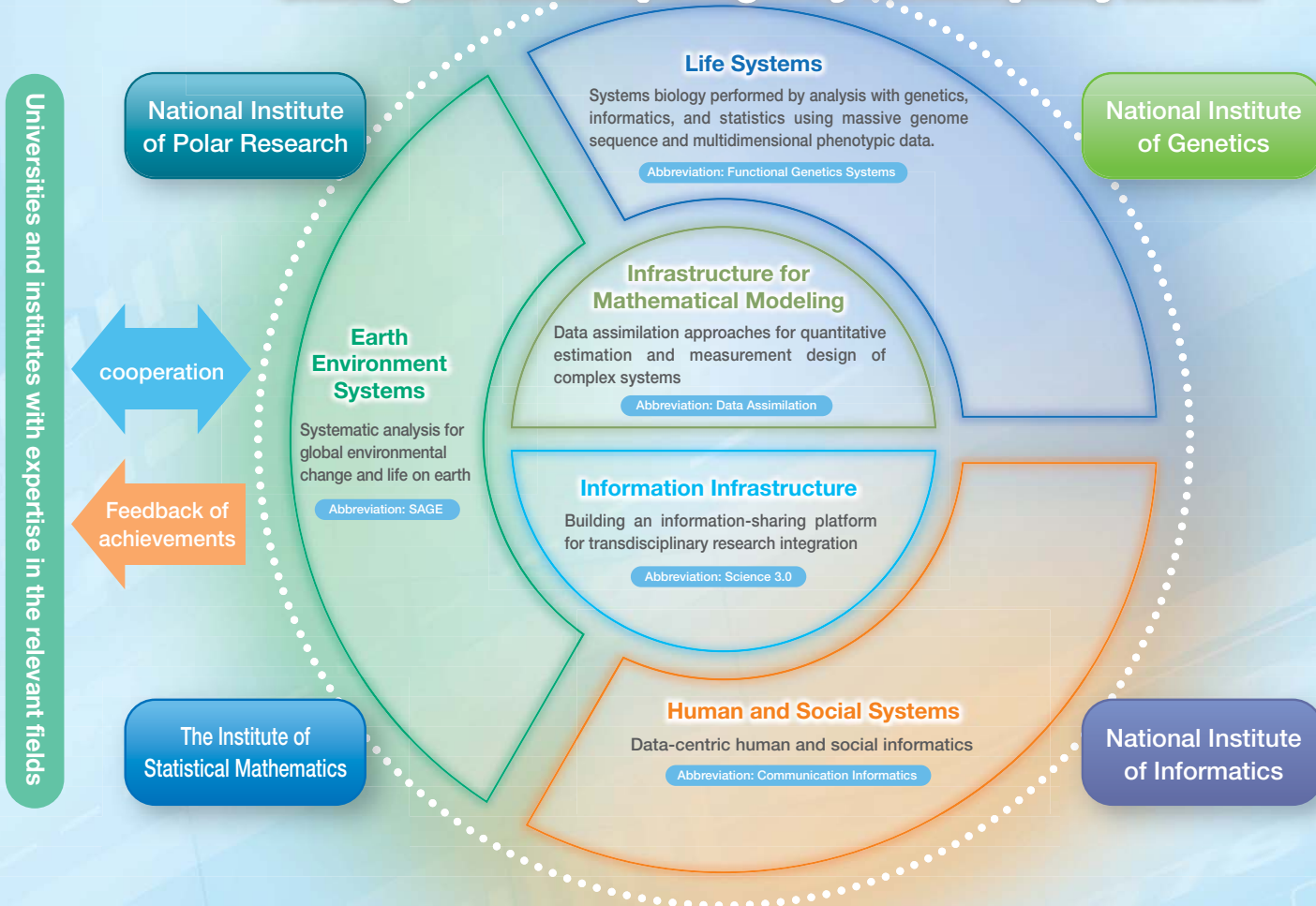
The five projects are distributed over the three fields of Earth Environment Systems, Life Systems, and Human and Social Systems in cooperation with the Statistical Mathematics Infrastructure and the Information Infrastructure. These projects are operated in a functional and organic way beyond the frameworks of the four institutes of ROIS.

2. Human resources development program

This is a program aimed at developing young researchers in institutes and universities, who will take over future TRIC activities. The program has the following three core features.

- 1) An annual meeting called "Young Researcher Cross Talk" is held in order to enhance communication among young researchers.
- 2) Participation in relatively small-scale pilot projects, which may be the seeds of transdisciplinary research and could be expanded into future transdisciplinary projects, is invited for all researchers in ROIS.
- 3) Relatively small-sized research meetings and workshops, for developing action plans to create new transdisciplinary research, are financially supported.

Creating new research paradigms by transdisciplinary research



Life Systems

Systems biology performed by analysis with genetics, informatics, and statistics using massive genome sequence and multidimensional phenotypic data.

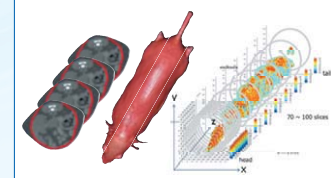
Abbreviation: Functional Genetics Systems

Project director: Professor, Nori Kurata (National Institute of Genetics)

Systems biology is a data-centric transdisciplinary study of genetics, informatics, and statistics focusing on complex interactions in biological systems. This project aims to describe genetic and phenotypic variation of organisms as systems, using massive genome sequence, gene expression and various phenotypic data from the unique and rich genetic resources at the National Institute of Genetics (NIG), information technology at the National Institute of Informatics (NII), and statistical modeling technology at the Institute of Statistical Mathematics (ISM). The collaboration of researchers from these institutes and other universities will develop new methodologies to understand complex systems of morphological and behavioral variation of organisms.

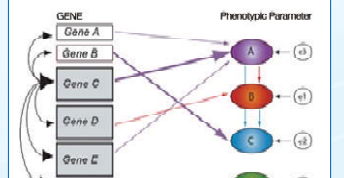
Development of auto-instrumentation systems for measuring phenotypic variations.

Informatic analysis of 3 dimensional graphic data, and statistical analysis of sequential data, etc.



Elucidation of global systems through analysis of individual genetic elements.

We use QTL, e-QTL, association analysis, graphical modeling, etc.



Human and Social Systems

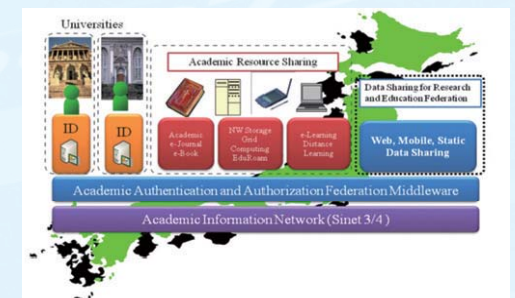
Data-centric Human and Social Informatics

Abbreviation: Communication Informatics

Project Director: Noboru Sonehara (National Institute of Informatics)

Associate Project Director: Hiroe Tsubaki (The Institute of Statistical Mathematics)

At present, scientific research is continuing to evolve with further innovative changes brought about by the advent of the Internet and related information and communication technologies. Thanks to the technology used in these sophisticated information systems, most of the hardware and sensors used to gather information are linked to these networks. Information distributed in digital form technically allows anybody to access it at any time and from any place. The empirical scientific research method based on complex large-scale data collected through these networks is called Data-centric Science. The Knowledge Circulation infrastructure, which creates new value by projecting concrete information from our society into cyberspace, analyzing and simulating it on the web, and enabling feedback from the web to real people and objects, will be one of the major pillars of future Human and Social Informatics. We have focused on three points: [1] automatic collection and accumulation of a vast amount of data reflecting our society; [2] providing feedback to users based on models constructed by the collected data; [3] the possibility of forming a site for Human and Social Data Sharing and Collaborative Research.



The structure of data sharing/collaborative research infrastructure

Earth Environment Systems

Systematic Analysis for Global Environmental Change and Life on earth

Abbreviation: SAGE

Project Director: Dr. Hideaki Motoyama (National Institute of Polar Research)

Sub-Project Director: Dr. Satoshi Imura (National Institute of Polar Research)

Environments on the earth have been formed by the balance of the atmosphere, hydrosphere, geosphere, biosphere, and anthroposphere. By analyzing the relationship between the evolution of life and global environmental change, a de novo science of life systems on Earth will be established.



Deep ice core of Dome Fuji station, Antarctica. Volcanic ash about 140,000 years old is seen as a straight thin layer at a depth 1,851m.



Moss pillars found at about 3m in depth in some Antarctic lakes. They are mainly composed of aquatic mosses, algae and bacteria. The largest one, up to about 80 cm in height, is thought to have been growing for about 1,000 years.

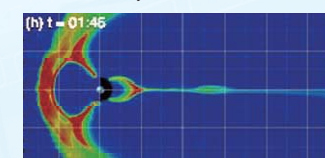
Infrastructure for Mathematical Modeling

Data Assimilation Approaches for Quantitative Estimation and Measurement Design of Complex Systems

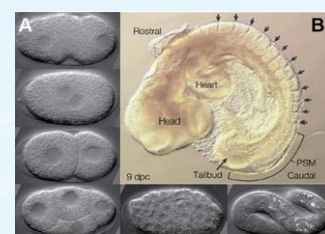
Abbreviation: Data Assimilation

Project Director: Dr. Junji Nakano (The Institute of Statistical Mathematics)

Increases in computing power enable us to develop more sophisticated multi-dimensional simulation models. Along with the advancement of observational techniques, databases holding observations are also growing rapidly. For these reasons new data fusion platforms need to be constructed for managing, fusing and serving massive data streams coming from simulations and observations. In this project, we focus on the generalization and sophistication of integrated operations that fuse together computational studies with analyses of observational data.



The data assimilation method will combine a numerical simulation model and observation data, thus yielding more powerful algorithms for the Earth's magnetospheric dynamics.



The data assimilation method is applied to developmental biology studies in order to construct quantitative models. On-going topics include cell division in the *C. elegans* embryo (A) as well as mouse embryogenesis (B).

Information Infrastructure

Building an Information-sharing Platform for Transdisciplinary Research Integration

Abbreviation: Science 3.0

Project Director: Dr. Noriko Arai (National Institute of Informatics)

Our project team launched a new web service called Research map, which is an information-sharing platform for researchers. By unifying the data of researchers, such as academic literature and conference talks, Research map helps researchers build their own portal sites instantly and start collaboration with other researchers.

The user of Research map obtains three virtual spaces at different access levels. The first one is called "My Portal," which can be used as the homepage. The second is called "My Room" and is meant to be a virtual private space not accessible by anyone else. The third is called "Community" and can be used as a collaborative working/learning space with other member researchers. Research map provides more than 30 portlet applications including Curriculum Vitae, Weblog, Cabinet and Video Sharing. The user can arrange the portlet applications intuitively on a given page by drag-and-drop, just like arranging one's own room to express oneself. With a lot more functions to be added shortly, Research map is now expanding to act as a bridge between researchers and the general public.



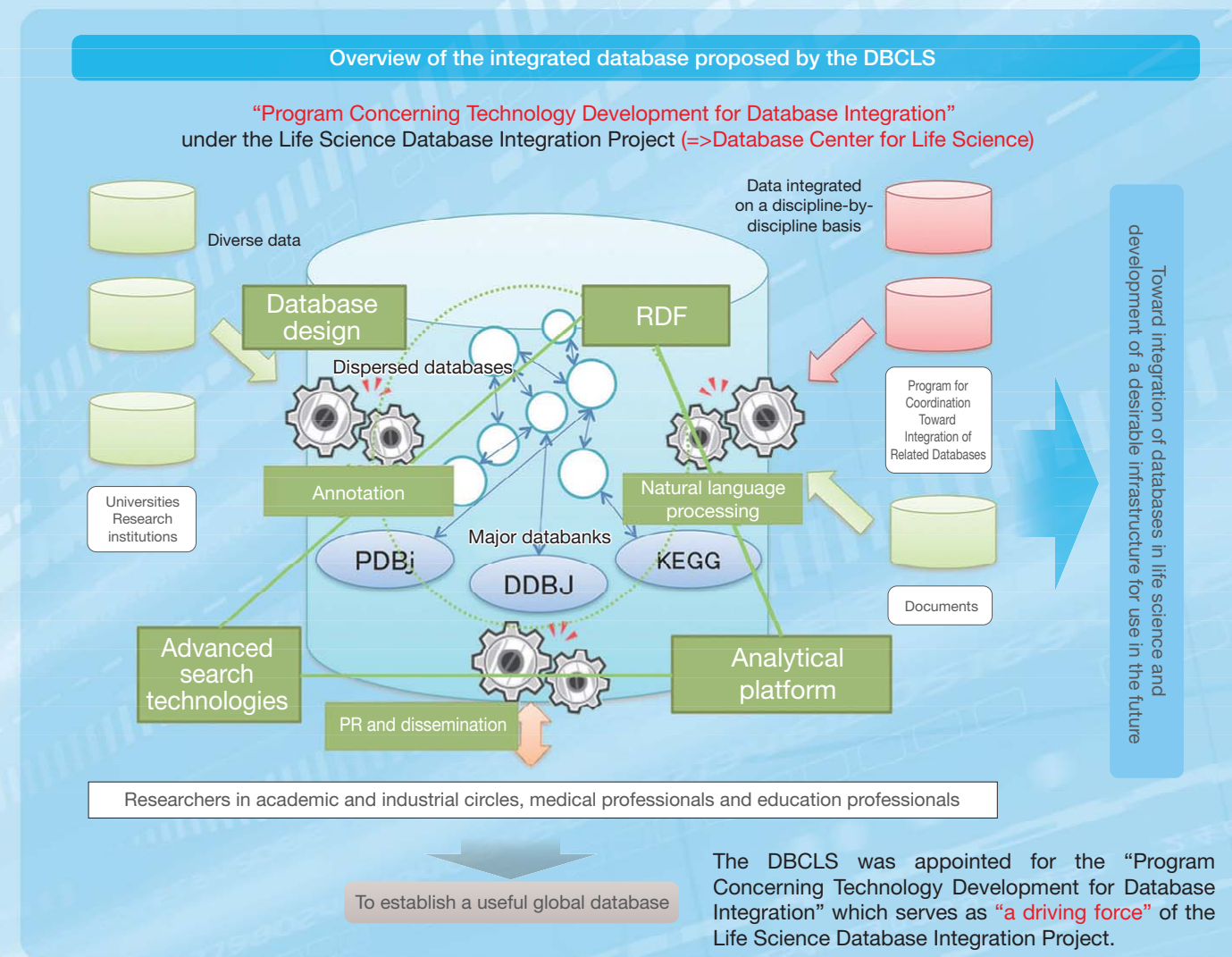
Database Center for Life Science

Creating an intellectual information infrastructure to develop life science

To improve the accessibility of life science repositories, the Database Center for Life Science (DBCLS) was set up as a core organization to promote repository integration, to enable a broad-based view of related knowledge resources, and to establish a new knowledge infrastructure.

The DBCLS took the initiative in running the Integrated Database Project, funded by the Ministry of Education, Culture, Sports, Science and Technology in FY2006-2010. In this project, a wide variety of services were provided for resolving different problems with databases in the domain of life science. To achieve more sophisticated integration, it is now necessary to accelerate technical development for service linkage and integration.

In FY2011, operation of the service will be transferred to the National Bioscience Database Center (NBDC), an institution newly established in the Japan Science and Technology Agency and responsible for carrying out the Life Science Database Integration Project, which takes over the achievements of the Integrated Database Project. The DBCLS will continue to contribute, focusing on sophisticated integration and development technologies through the "Program Concerning Technology Development for Database Integration" under the Life Science Database Integration Project, with the aim of developing the integrated database infrastructure that will be necessary in the future.



Change in Life Cycles of Research Data and Integrated Database

In life science, innovative advancements in analytical methodologies and measuring devices have paved the way for obtaining various kinds of data in large quantities. Shifting from the stage that prioritized the collection of data, we are now in a phase where we have to establish new styles of research in order to achieve innovations in the bio-industry, discoveries of new knowledge in life science and the development of data-driven science.

Under these circumstances, the final goal of the database integration is to provide well-organized and meaningful data that lead to discoveries. To meet this goal, it is essential to develop and provide a data-sharing environment and the necessary content that will ensure stress-free retrieval of data and information to individual researchers and engineers from databases of such diversity and scale that they cannot be dealt with individually. In addition, for the purpose of encouraging further knowledge discoveries, an environment needs to be built wherein knowledge is stored on the integrated database as soon as it is available so that it can be effectively shared.

There are some data-intensive data centers outside Japan, such as the National Center for Biotechnology Information in the United States, which has more than 20 years of history, and the European Bioinformatics Institute in Europe. In Japan, given that numerous databases have already been established independently, database integration is considered more effectively achieved by creating an environment that enables integrated use of data than by re-collecting the data. The DBCLS proposes a "federated" approach for database integration, by which dispersed databases are used as they are, rather than using a large-scale concentration approach.

A future vision of data-driven life science studies

Data held in Japan or which originate in Japan are currently available in an organized form only on overseas sites. The DBCLS believes that this situation will change markedly by creating an environment for integrated use that provides information in an organized and useful manner that helps uncover new knowledge. At the same time, it will help considerably to boost Japan's position as an originator and distributor of information to overseas locations. Technologies for active use of the Internet are developed based on the human network created through yearly workshops with the world's front-line researchers and developers for the application of Web services and the Semantic Web to the domain of life science. These technologies are expected to assume a world-leading position.

Construction of an integrated database with a dispersed network and development of technologies for using it

The Integrated Database Project (up to FY2010) tackled different problems with databases in life science, such as obscurity in locational information and method of use, lack of reliable annotation, inadequate disclosure of achievements made in large-scale projects, and maintenance difficulties after the end of the project. To resolve these problems, the Project developed a database catalog containing locational information, cross-database search covering multiple databases and a database archive for conservation and sharing. It also achieved many positive results in the development of fundamental technologies for services and in content production. On the other hand, it left some problems unsolved, including the continued increase in databases and insufficiency of linkage in services.

The DBCLS then defined the construction of an integrated database with a dispersed network based on the Resource Description Framework (RDF) technology and the development of technologies for utilization as main tasks for integration in the next phase. Principal and other useful databases in Japan and abroad, with different specifications, will be integrated using the RDF, and an analytical platform and search technologies will be created to suit the integrated database. This attempt will greatly facilitate analysis based on a combination of heterogeneous databases and will be helpful for the addition of annotations to data. This will increase convenience for domestic researchers and help create an advanced integrated database system of international standards.

While forging ahead with integration based on the RDF, the DBCLS will also endeavor to develop data storage and analysis approaches and a method of sharing among the community of researchers as part of its efforts to develop technologies for using massive amounts of data accumulated like a next-generation sequencer at a pace that far exceeds past levels.

Enhancement of existing services and provision of information

The Integrated Database Project pushed ahead with the creation of unique content as well as Japanese language content. This will be continued and further enhanced. With respect to activities for dissemination and public awareness building, the DBCLS will vigorously offer suggestions and cooperation to the NBDC, which will be a base for the entire project's activities. Meanwhile, DBCLS will also conduct independent activities. The DBCLS will continue to invite users' requests and comments at support@dbcls.rois.ac.jp and proactively respond to them.

The Graduate University for Advanced Studies <SOKENDAI>

Cooperation with the Graduate University
for Advanced Studies

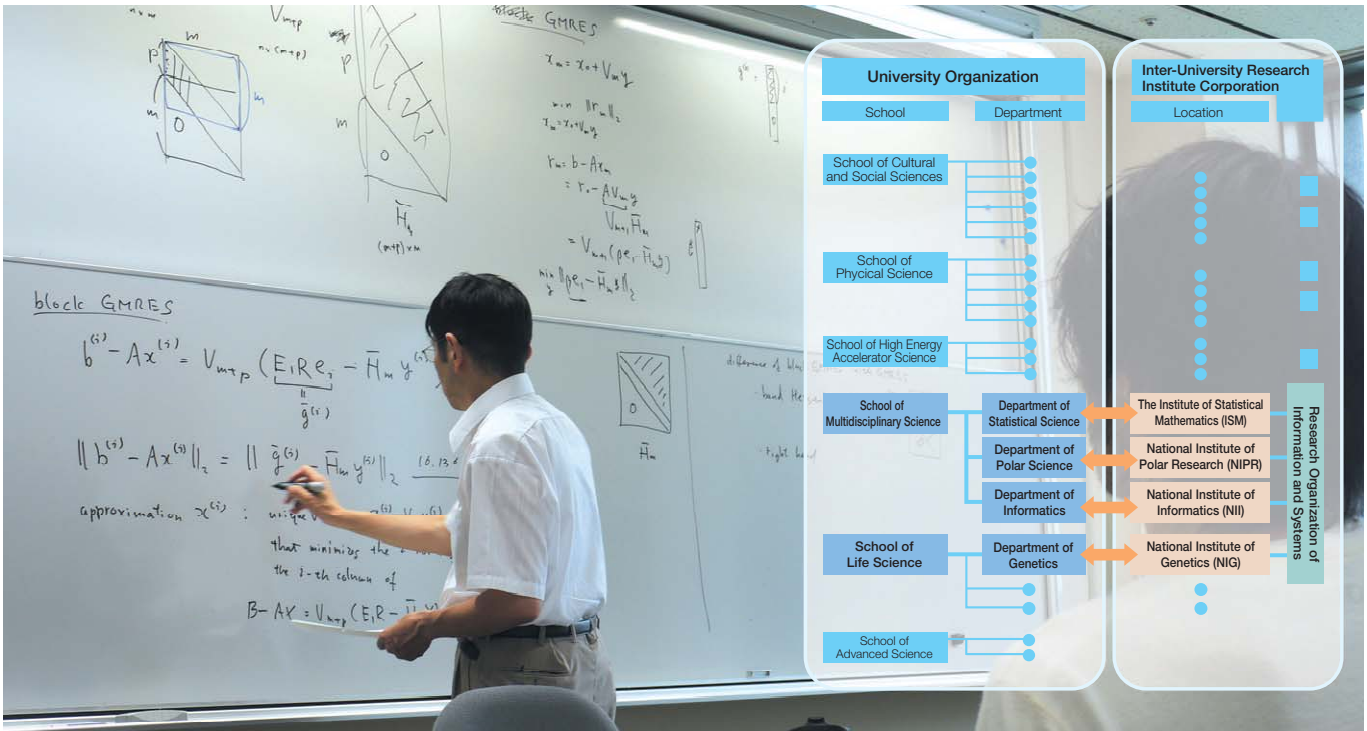
Cooperation with the Graduate University for Advanced Studies

The Research Organization of Information and Systems (ROIS) serves as the platform for the educational activities of the Graduate University for Advanced Studies (SOKENDAI).

Founded in 1988, SOKENDAI is a dedicated graduate university, offering no undergraduate courses but providing doctoral programs taught by researchers and using the research facilities of the Inter-University Research Institutes. Students receive education on a

one-to-one basis and have the opportunity to interact with researchers working at the very forefront of their fields. Many of the students who graduate from the university go on to play important international roles as researchers.

The four research institutes of the Research Organization of Information and Systems also take part in SOKENDAI and have been making outstanding contributions.



■ Number of students enrolled (As of May 1, 2010)

School	Department	Number of students		1st year		2nd year		3rd year		4th year		5th year		Total	
		3-year term	5-year term		Foreign students		Foreign students		Foreign students		Foreign students		Foreign students		Foreign students
School of Multidisciplinary Science	Statistical Science	3	2	3	1	1	0	5	0	8	0	13	0	30	1
	Polar Science	1	2	1	0	3	0	2	0	3	0	7	1	16	1
	Informatics	6	4	7	4	8	3	14	5	10	4	33	7	72	23
School of Life Science	Genetics	6	3	4	0	8	2	10	3	9	1	13	0	44	6
Total		16	11	15	5	20	5	31	8	30	5	66	8	162	31

■ Degrees Conferred (FY2010)

School	Department	Location	Total
School of Multidisciplinary Science	Statistical Science	The Institute of Statistical Mathematics (ISM)	7
	Polar Science	National Institute of Polar Research (NIPR)	2
	Informatics	National Institute of Informatics (NII)	8
School of Life Science	Genetics	National Institute of Genetics (NIG)	8
Total			25

School of Multidisciplinary Sciences

●Department of Statistical Science

Amid a flood of information and uncertainty, statistical science researches statistical models and methods for the use of data to enable rational inferences, discover scientific truths, and make effective predictions. The Department of Statistical Science aspires to equip students with the confidence and research capabilities to help solve important and intricately interrelated problems. The department has accepted students from a wide range of disciplines, and graduates have gone on to become university professors and laboratory technicians, meeting needs from universities and other institutions for researchers and teachers of statistical science.



Poster session

●Department of Polar Science

The polar regions encompass a grand natural system of polar space, the polar atmosphere, the polar hydrosphere, the polar lithosphere, and the polar biosphere. Building on a broad area of research, polar science seeks to investigate and clarify physical, chemical, and biological processes and their interactions as part of the earth's system.

The Department of Polar Science seeks to educate students and conduct research mainly on natural phenomena in the Arctic and Antarctic regions, taking a holistic view of the global environment and training researchers with sophisticated research capabilities and competence as field scientists.



Auroral observation

●Department of Informatics

Informatics is a new academic specialty that synthesizes a wide range of information-related tasks. It is a complex science that traverses humanistic informatics and social informatics, dealing with people and society, stepping outside the traditional core of information science and information technology.

The Department of Informatics covers a number of academic fields, from traditional computer science and information technology to humanistic social science and life science. It aspires to train researchers through fundamental, applied, and practical levels of education and research, and to develop leaders who will play an active role in informatics through highly sophisticated professional training.



Discussion

School of Life Science

●Department of Genetics

Aiming to understand the phenomena of life in the context of genes, the Department of Genetics educates students and conducts research in the fundamental areas of molecules, cells, individuals, and population genetics, as well as in fields that apply these fundamental areas, by utilizing bioinformatics based on numerous experimental organism systems and DNA databases developed by the National Institute of Genetics and other state-of-the-art research equipment.

Graduate programs provide a system in which students receive guidance from several instructors, in addition to one tutor under the policy that all faculty members should be involved in the education of each student.



High-Quality Research

Public Relations and Communication

ROIS is working on many different public relations and communication activities for informing researchers and the general public of its cutting-edge research and for gaining understanding and support for its activities. Some examples are showcased here.

Symposium

The ROIS website is a portal for information on its ROIS organizes an annual symposium series titled "Information and Systems 20xx" on a topic selected from among those common to its research activities.

In the previous fiscal year, the series focused on modeling, which was a common topic as a research approach. In six domains including human engineering, e-science and the global environment, speakers from inside and outside ROIS delivered lectures, followed by a panel discussion on what is important to graduate education for developing human resources with modeling technologies.



A scene at the venue of the symposium in the preceding fiscal year

"Information and Systems" symposium series

FY	Theme	Date	Venue	No. of participants
2008	Information and Systems Inducing Social Innovations	Nov. 5, 2008	Hitotsubashi Kinen Kodo	250
2009	Infrastructure for Sciences and Culture: Database Developed with Universities	Nov. 30, 2009	Kokuyo Hall	160
2010	Literacy in the Mass Information Society: Modeling Technology	Oct. 25, 2010	Hitotsubashi Kinen Kodo	230

Open House

Each institute has an open house day for the public, with researchers providing lectures, exhibitions and other types of explanations to make its everyday research activities and results known to local communities, researchers and aspiring researchers.

On the grounds of the National Institute of Genetics, more than 260 precious varieties of cherry tree that have been collected from around the country come into bloom in spring. The open house event here takes place annually in early April, at the same time that the cherries bloom, and attracts more than 10,000 visitors. At the National Institute of Polar Research, the exploration tour, which lets visitors experience a cold room at -50°C, and live talks with the Showa Station in Antarctica are popular.



Open House at the National Institute of Genetics

Polar Science Museum (under the National Institute of Polar Research)

The Polar Science Museum is a permanent exhibition facility newly established on the Tachikawa Campus. It offers a broad range of information on Japan's foremost polar science studies as well as its current status, results and the history of Antarctic and Arctic observation.

At the Aurora Theater, realistic movies of polar auroras are displayed on a four-meter full-dome screen. Images of Antarctic exploration, meteors and stuffed specimens of animals collected in Antarctica, a snow vehicle actually used by the observation team and a model of a private room in the Showa Station are also on display, as well as Antarctic ice that visitors are allowed to touch.



An inside view of the Polar Science Museum

Guide for Visiting

Opening Hours	Tuesday - Saturday from 10 a.m. to 5 p.m.
Closed	Sunday, Monday, national holidays and Dec. 28 - Jan. 4
Admission	Free

Website

The ROIS website is a portal for information on its activities and events, corporate data and the latest information about its institutes. It is dedicated to the timely communication of information.



ROIS sites on Twitter

Institute/Center	Official Account
National Institute of Polar Research	@kyokuchiken
National Institute of Informatics	@jouhouken
Data Center for Life Science	@dbcls

Publications

ROIS publishes serial publications that plainly explain its research findings to the general public in the form of commercially available books. Publication of the NIPR Library has begun subsequent to the NII Series.



Exhibition Space in the National Institute of Genetics

In an elegantly colored room on the first floor of the main building, NIG's history of more than 60 years, a copy of the first impression of Charles Darwin's *On the Origin of Species* and a collection of decorated plates drawn by Nobel laureates and other famous researchers in commemoration of their visits to NIG are on display.



The Exhibition Space

Public Lecture Series at the National Institute of Informatics

NII researchers provide explanations on the forefront of informatics to the public. This fiscal year, the series focuses on eight subjects, including quantum computers and software quality assurance, under the theme "Informatics that Support the Future."



Hours	18:30-19:45 (except for Session 1: 19:00-20:30)
Fee	Free (prior application required)
For details, see	http://www.nii.ac.jp/shimin

Schedule for FY 2011

Session	Date	Theme	Lecturer
1	Jun. 2, 2011	Medical Care Supported by Wireless Sensor Networks	Osamu Sudoh
2	Aug. 1, 2011	Quantum Technology Opens the Door to New Information Society	Yoshihisa Yamamoto
3	Sep. 1, 2011	A Scientific Analysis of Communication	Mayumi Bono
4	Oct. 5, 2011	Character Codes in the Internet Age	Akira Miyazawa
5	Nov. 2, 2011	Compressing Data	Kunihiko Sadakane
6	Nov. 30, 2011	IT Contributes to the Environment	Shoichiro Asano
7	Jan. 18, 2012	Understanding Language with Computers	Yusuke Miyao
8	Feb. 15, 2012	Software Quality Assurance	Shin Nakajima

Open Courses at the Institute of Statistical Mathematics

At the ISM, in-house and external lecturers deliver open lectures for researchers, students and the general public. The ISM offers courses on a wide variety of subjects ranging from cutting-edge theories and approaches in statistical science to basic issues.



Course Length	1 to about 4 days
Fee	Varies depending on the course
For details, see	http://www.ism.ac.jp/lectures/kouza.html

Schedule for the First Half of FY 2011

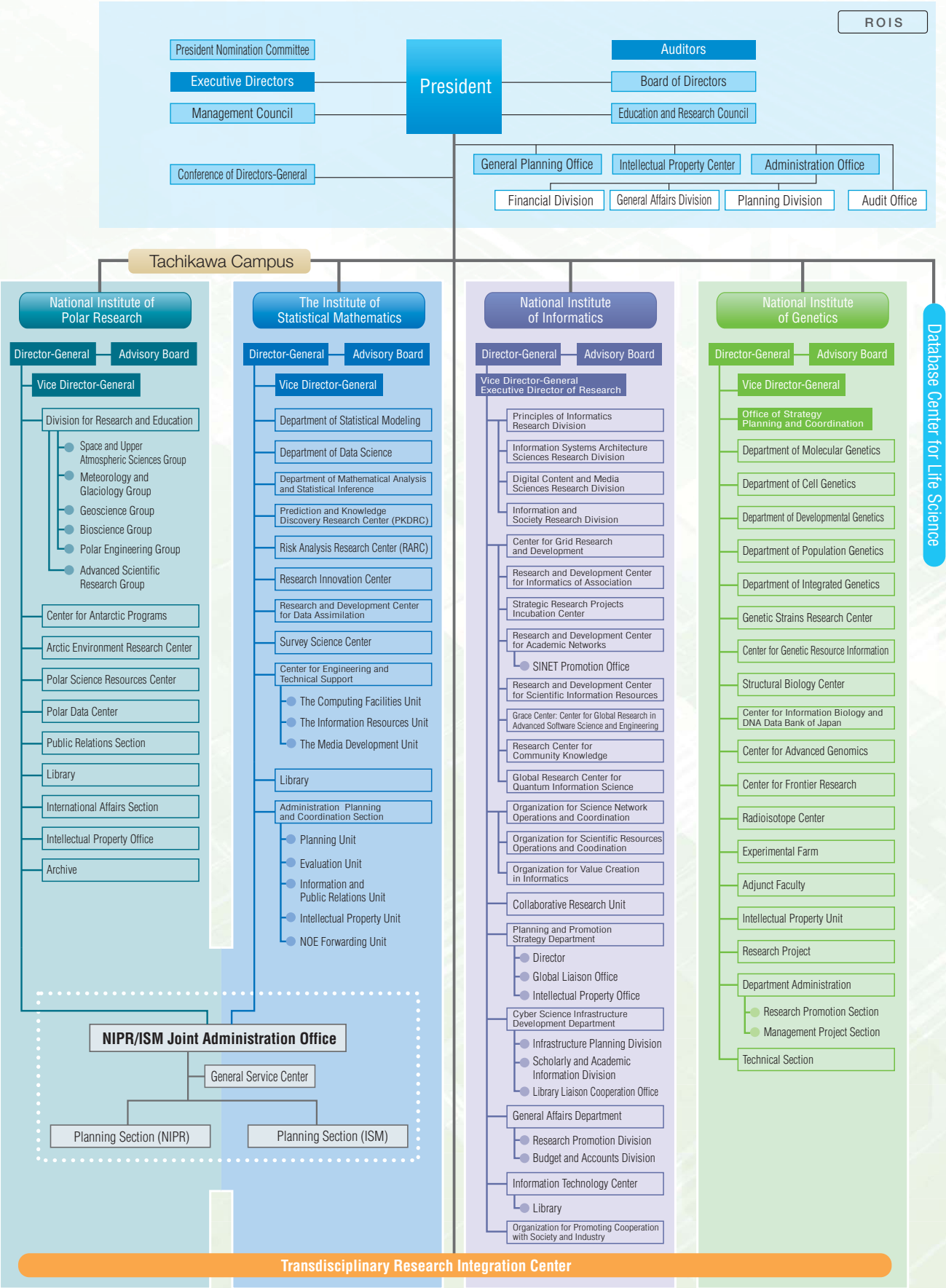
Date	Course
May 16-19, 2011	Introduction to Sampling and Methods of Analyzing Survey Data
Jun. 9-10	Akaike's Information Criterion and Statistical Modeling
Aug. 29-Sep. 1	Multivariate Statistics
Sep. 21-22	New Developments of Model-Free Controller Design: Basic Theory on Fictitious Reference Iterative Tuning (FRIT) and its Application
Oct. 18-21	Introduction to Statistics
Nov. 10-11	Basics of Statistical Analysis via the Martingale Theory

Open Lectures at the National Institute of Polar Research

This fiscal year, the NIPR will launch its open lectures. Leading researchers from the Institute will provide clear explanations on polar science and the cutting edge of Arctic and Antarctic observation. To respond to the diverse needs of local communities, the open lectures will be provided as jointly planned lectures with the Tachikawa City Government and the Citizens Promotion Committee for the Tachikawa Citizen Exchange College.

Schedule	Three lectures lasting 2 hrs each, around Oct.-Dec.
Fee	Free

Details will be published on the website and elsewhere as soon as they are confirmed.



General Planning Office

The General Planning Office was established simultaneously with the Research Organization of Information and Systems (ROIS) as part of the headquarters organization of ROIS, aiming to deal with cross-functional activities of ROIS such as the development, execution, and evaluation of mid-term plans, annual plans, and public relations.

The General Planning Office comprises faculty in charge of the management of each of the research institutes, including

vice-directors, as well as administrative managers of ROIS headquarters and each of the research institutes. Faculty and administrative staff work together to ensure efficient operation of the organization.

A dedicated organization has been established within each of the research institutes as a counterpart to the General Planning Office to facilitate the management of ROIS through cooperation between ROIS headquarters and the research institutes.

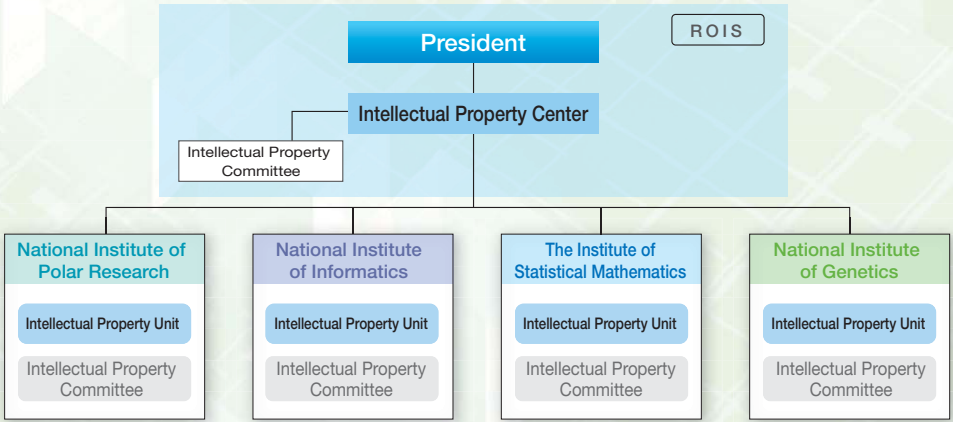


Intellectual Property Center

The Intellectual Property Center was established simultaneously with the incorporation of the Research Organization of Information and Systems (ROIS) as part of the headquarters organization of ROIS to deal with ROIS's business relating to "Cooperation among Businesses, Universities and Government" and intellectual property. Later in fiscal 2008, each of the research institutes established an Intellectual Property Unit to prepare for the development of the system currently in place, which enabled mutual cooperation and a flexible response to intellectual activities that required immediacy.

The Intellectual Property Unit has the mission of developing and executing measures to make the best use of the research

results achieved by the research institutes in areas such as "Cooperation among Businesses, Universities and Government," intellectual property management, and copyright analysis. A significant number of works, including software and content, are held by ROIS. To resolve issues such as ownership of the rights that arise when these works are provided to society, actual project support cases are used for case-based modeling. The Intellectual Property Center is pursuing mutual cooperation and information exchange with the four Inter-University Research Institute Corporations as well as the Graduate University for Advanced Studies (SOKENDAI).



Board of Directors

As of April 1, 2011

President	Genshiro Kitagawa	President, Research Organization of Information and Systems
Executive Director	Masao Sakauchi	Director-General, National Institute of Informatics
Executive Director	Yoshiyuki Fujii	Director-General, National Institute of Polar Research
Executive Director	Yuji Kohara	Director-General, National Institute of Genetics
External Executive Director	Mitiko Go	External Executive Director, Research Organization of Information and Systems
External Auditor	Yoshifumi Yasuoka	Auditor
External Auditor	Hitoshi Terao	Auditor

Management Council

As of April 1, 2011

Toshiharu Aoki	Senior Advisor, NTTData Corporation
Yoshiyuki Sakaki	President, Toyohashi University of Technology
Kazuo Shinozaki	Director, Riken Plant Science Center
Naoyuki Takahata	President, The Graduate University for Advanced Studies
Atsuko Tsuji	Chief Editorial Writer, The Asahi Shimbun Company
Mario Tokoro	President and CEO, Sony Computer Science Laboratories, Inc.
Hideyuki Nakajima	President, Future University-Hakodate
Takeshi Nagasu	Officer Special Associate to CSO, Eisai Co., Ltd.
Kunihiko Niwa	Principal Fellow, Center for Research and Development Strategy, Japan Science and Technology Agency (JST)
Shinji Mae	Professor Emeritus, Hokkaido University
Takeaki Mori	Executive Director, Kanagawa Institute of Technology
Genshiro Kitagawa	President, ROIS
Yoshiyuki Fujii	Executive Director, ROIS
Masao Sakauchi	Executive Director, ROIS
Yuji Kohara	Executive Director, ROIS
Mitiko Go	External Executive Director, ROIS
Tomoyuki Higuchi	Director-General, ISM
Kazuyuki Shiraishi	Vice Director-General, NIPR
Yoh'ichi Tokura	Vice Director-General, NII
Yoshinori Tamura	Vice Director, ISM
Takashi Gojobori	Vice Director-General, NIG
Shigeru Kure	Executive Secretary, ROIS

Membership

As of May 1, 2011

Institute	Director General	Research/ Education staff	Technical staff	Administrative Staff	TOTAL
Administration Office				18	18
National Institute of Polar Research	(1)	52	23	24	99 (1)
National Institute of Informatics	(1)	70	5	43	118 (1)
The Institute of Statistical Mathematics	1	49	10	13	73
National Institute of Genetics	(1)	68	15	19	102 (1)
Database Center for Life Science					
TOTAL	1 (3)	239	53	117	410 (3)

※ () Includes Board of Directors

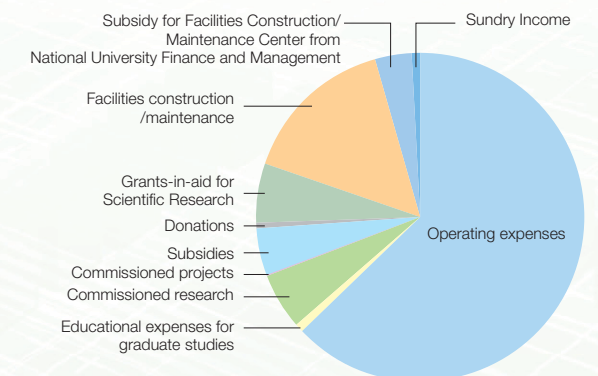
Education and Research Council

As of April 1, 2011

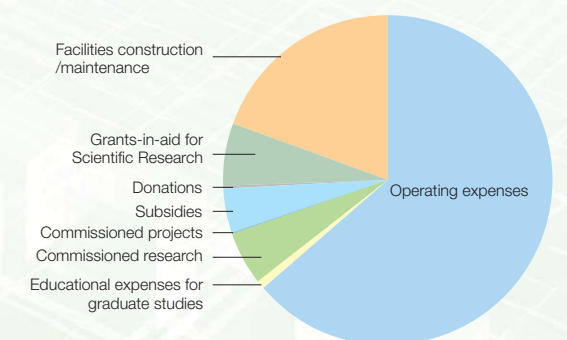
Kazuyuki Aihara	Professor, The University of Tokyo
Setsuo Arikawa	President, Kyushu University
Masatoshi Takeichi	CDB Director, Riken Center for Developmental Biology
Masato Tanaka	Professor, Hitotsubashi University
Asahi Taniguchi	Professor, Tokyo University of Agriculture
Shojiro Nishio	Trustee and Vice President, Osaka University
Shoichiro Fukao	Professor, Fukui University of Technology
Masayuki Yamamoto	Professor, The University of Tokyo
Genshiro Kitagawa	President, ROIS
Yoshiyuki Fujii	Executive Director, ROIS
Masao Sakauchi	Executive Director, ROIS
Yuji Kohara	Executive Director, ROIS
Mitiko Go	External Executive Director, ROIS
Tomoyuki Higuchi	Director-General, ISM
Natsuo Sato	Vice Director General, NIPR
Jun Adachi	Director Cyber Science Infrastructure Development Department, NII
Hiroe Tsubaki	Vice Director General, ISM
Toshihiko Shiroishi	Director, Genetic Strains Research Center, NIG

Accounting, FY2010

Revenue (figures in thousands of yen)	
Operating expenses	19,220,352
Educational expenses for graduate studies	218,297
Commissioned research	1,695,921
Commissioned projects	26,013
Subsidies	1,485,604
Donations	133,607
Grants-in-aid for Scientific Research	1,775,830
Facilities construction/maintenance	4,655,000
Subsidy for Facilities Construction/Maintenance Center from National University Finance and Management	1,083,187
Sundry Income	241,371
TOTAL	30,535,182



Expenses (figures in thousands of yen)	
Operating expense	18,885,651
Educational expenses for graduate studies	218,297
Commissioned research	1,608,509
Commissioned projects	17,006
Subsidies	1,288,860
Donations	95,356
Grants-in-aid for Scientific Research	1,775,830
Facilities construction/maintenance	5,738,187
TOTAL	29,627,696



External Funds, FY2010

(figures in thousands of yen)

	Grants-in-aid for Scientific Research ※including other research subsidies		Commissioned Projects		Joint Research (private-sector)		Commissioned Research		Donations	
	Project	Amount	Project	Amount	Project	Amount	Project	Amount	Project	Amount
National Institute of Polar Research	56	308,953	3	13,276	0	0	2	3,567	6	6,210
National Institute of Informatics	110	259,667	28	391,806	15	22,535	27	21,363	24	61,753
The Institute of Statistical Mathematics	59	124,206	13	119,812	2	23,290	0	0	4	4,356
National Institute of Genetics	104	1,062,231	13	508,910	5	6,100	3	1,082	16	53,977
TRIC	14	19,762	0	0	0	0	0	0	1	1,700
DBCLS	1	1,008	2	610,188	0	0	0	0	1	1,200

Number of Institutions and Joint Researchers Enrolled in Inter-University Joint Research Projects, FY2010

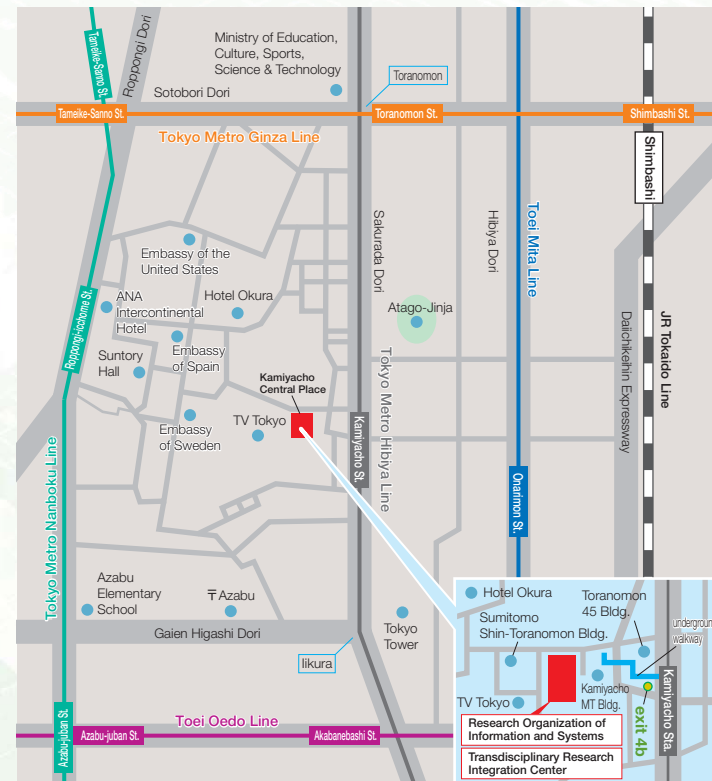
	No. of institutions	Total	Breakdown of organizations to which joint researchers belong							
			National Universities	Inter-University Research Institutes	Public Universities	Private Universities	Public Institutions	Private Institutions	Foreign Organizations	Others
National Institute of Polar Research	254	834	385	10	26	125	129	101	48	10
National Institute of Informatics	209	590	309	28	22	103	34	43	47	4
The Institute of Statistical Mathematics	240	655	311	2	30	152	112	39	9	0
National Institute of Genetics	97	453	272	6	20	76	38	1	27	13
TOTAL	800	2532	1277	46	98	456	313	184	131	27

Special Inter-University Researchers, FY2010

National Institute of Polar Research	National Institute of Informatics	The Institute of Statistical Mathematics	National Institute of Genetics	TOTAL
19	33	2	4	58

Inter-University Research Institute Corporation Research Organization of Information and Systems

Kamiyacho Central Place 2F,
4-3-13 Toranomon, Minato-ku,
Tokyo 105-0001, Japan
TEL : +81-(0)3-6402-6200
FAX : +81-(0)3-3431-3070
<http://www.rois.ac.jp/english/index.html>

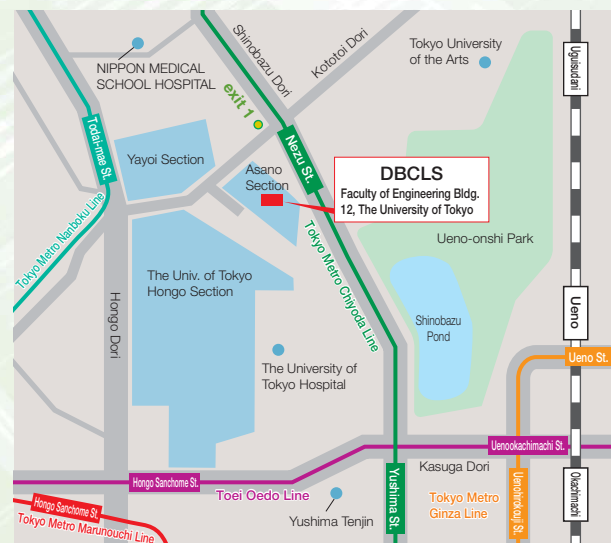


Transdisciplinary Research Integration Center

Kamiyacho Central Place 2F,
4-3-13 Toranomon, Minato-ku,
Tokyo 105-0001, Japan
TEL : +81-(0)3-6402-6228
<http://www.rois.ac.jp/tric/index.html>

Database Center for Life Science

Faculty of Engineering Bldg. 12,
The University of Tokyo 2-11-16,
Yayoi, Bunkyo-ku, Tokyo
113-0032, Japan
TEL : +81-(0)3-5841-6754
<http://dbcls.rois.ac.jp/en/>



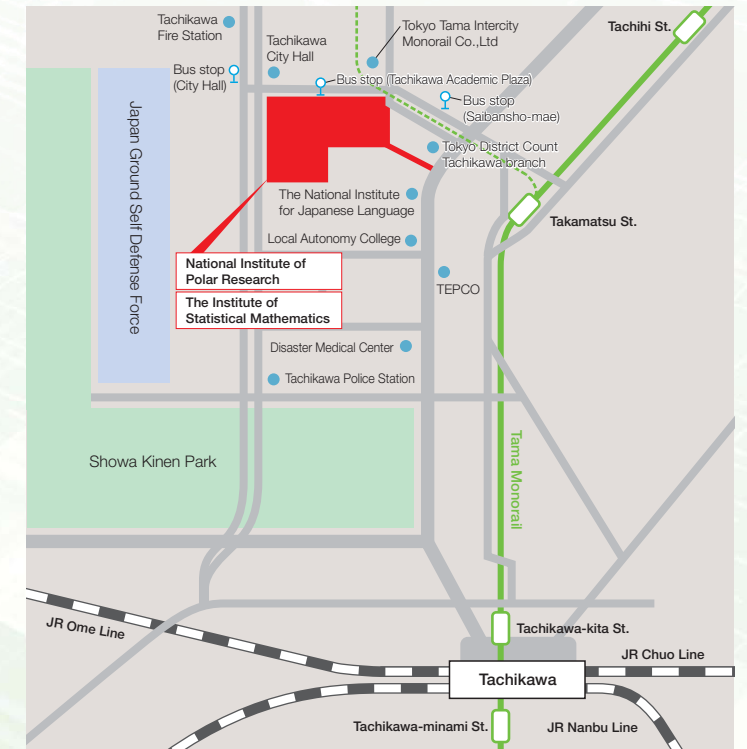
National Institute of Polar Research

10-3, Midori-cho, Tachikawa,
Tokyo 190-8518, Japan
TEL : +81-42-512-0608
<http://www.nipr.ac.jp/english/>



The Institute of Statistical Mathematics

10-3, Midori-cho, Tachikawa,
Tokyo 190-8562, Japan
TEL : +81-(0)50-5533-8500
http://www.ism.ac.jp/index_e.html



National Institute of Informatics

2-1-2 Hitotsubashi, Chiyoda-ku,
Tokyo 101-8430, Japan
TEL : +81-3-4212-2000(Exchange)
<http://www.nii.ac.jp/en/>



National Institute of Genetics

Yata 1111, Mishima, Shizuoka
411-8540, Japan
TEL : +81-(0)55-981-6707
<http://www.nig.ac.jp/index-e.html>

