Figure 2-4-1 / World Premier International Research Center Initiative (WPI)

World Premier International Research Center Initiative (WPI)

〈Background〉 Competition for securing the world's finest brains has intensified. To maintain and improve Japan's scientific and technological standing, we need to place ourselves within the global flow of outstanding human resources while creating research platforms that attract them from around the globe.

〈Purpose〉
The WPI provides priority support for proposals aimed at creating world premier international research centers. By achieving a very high research standard and providing an excellent research environment, the centers should be "globally visible research centers," able to attract top-level researchers from around the world.

〈Requirement for creating centers〉
○Physical concentration (or core) of talented researchers
○International-standard administration and environment
・Strong leadership by center director
・English as the primary language (including at administrative division)
・Environment in which researchers can devote themselves exclusively by providing sufficient staffs etc.
○Securement of additional resources that match or exceed the amount of the project grant

(Image of research centers)
・At least 10-20 world-class principal investigators (PI)
・A total of at least 200 staff members
・At least 30% overseas researchers

→ **"Advancing leading-edge research", "Creating interdisciplinary domains", "Establishing international research environments", "Reforming research organizations"**

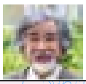
〈Program Contents〉
○ Targeted fields
- Basic research
○ Funding period
- 10 years
(15 years for a center with outstanding results)
○ Project funding
- Around ¥1.3-1.4 billion a year per center
○ Follow-up
Scrutinized supervision of progress by strong follow-up system centered on the "WPI Program Committee," including members of Novel laureate and noted foreign intellectual, as its main organization has been carrying out.

(Five centers adopted in 2007)

Osaka University
IFReC:Immunology Frontier Research Center
—Elucidating the dynamic immune system using Bioimaging technology
Director : Shizuo Akira

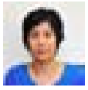
The most cited immunologist in the world over the past ten years

Kyoto University
iCeMS:Institute for Integrated Cell-Material Sciences
—Integrating cell and material sciences to create new cross-disciplinary-fields, thereby advancing stem cell technologies and mesoscopic sciences
Director : Norio Nakatsuji

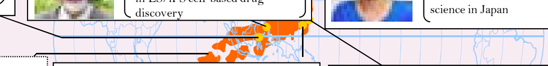


Japan's pioneer in the establishment and distribution of human ES cell lines, and a leader in ES/iPS cell-based drug discovery

Tohoku University
AIMR:Advanced Institute for Materials Research
—Discovering innovative substances and creating related devices/systems using atomic/molecular control methods
Director : Motoko Kotani

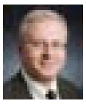


Mathematician; leader of the interdisciplinary research between math and material science in Japan



(One center adopted in 2010)

Kyushu University
I²CNER:International Institute for Carbon-Neutral Energy Research
—Creating science-driven technologies for producing, storing and using hydrogen and for capturing and sequestering CO_2
Director : Petros Sofronis



Rationalized and linked experimental evidence of hydrogen-induced plastic flow localization at the macroscale with the shielding effect of hydrogen at the microscale

The University of Tokyo
Kavli IPMU:Kavli Institute for the Physics and Mathematics of the Universe
—Elucidating the origin and evolution of the universe through collaboration among math, physics and astronomy
Director : Hitoshi Murayama

Leading theorist in particle physics and principal investigator of a world-leading observational project in astrophysics

National Institute for Material Science(NIMS)
MANA:International Center for Materials Nanoarchitectonics
—Developing materials to advance sustainable development based on nanoarchitectonics
Director : Masakazu Aono

Pioneer in nanoscale science and technology; awarded the Feynman Prize, etc.

Source : Created by MEXT

Section 2 Development of Human Resources that can Lead S&T

Japan is poor in natural resources and its population is expected to continue decreasing in the future. In order to vigorously push forward the STI policies in this county, it is essential to constantly foster and secure human resources who will become leaders in these fields. We should take measures so that people who will lead the future of our country can proactively enter the fields of STI with visions and hope. Therefore, we are actively making efforts to foster and secure human resources who are able to demonstrate their capabilities at home and abroad, lead the world in their specialties, and lead the next generation, as well as the efforts to improve their career paths.

1 Development of Human Resources Capable of Working Actively in Diverse Scenes

(1) Drastic enhancement of graduate school education

In modern society, where S&T have been highly advanced, knowledge has been increasingly specialized and fractionalized, and international competition has been intensified. Our urgent issue is to foster human resources who have profound professional knowledge and a wide range of practical skills that can be applied to new fields of study and rapid technological innovation. Graduate schools should play a key role in developing such human resources, and the number of their students has increased by a factor of 2.8 in the 20 years from FY 1991 to FY 2011. The quantity has been increased satisfactorily, and the quality of their education should be improved further in the future.

In the light of the situation, while understanding social needs, each graduate school needs to clarify the aims of its courses, organize and practice a systematic education program that leads students to academic degrees in accordance with the aims, and should be thorough in management and clarification of the process in order to enrich and enhance the education at graduate schools (systematic enhancement of education).

Based on "Graduate School Education in the Globalized Society" (Report of The Central Council for Education, January 31, 2011), MEXT drew up a five-year plan, "Second Platform for the Promotion of Graduate School Education" (endorsed by the Minister of Education on August 5, 2011) setting forth terms for furthering the development and enhancement of graduate school education.

By foreseeing the further development of globalization and a knowledge-based society, reconstruction and revival from the earthquake disaster as well as creation and growth of a new society, , the platform plans to take several measures to guarantee and improve the quality of graduate school education along the viewpoints illustrated in Table 2-4-2 below, with an emphasis on communication with various communities inside and outside Japan, as well as great service for those who have completed a graduate school with guaranteed quality based on the enhancement of the efforts to enrich graduate school education.

Table 2-4-2 / Basic Viewpoints of "Second Platform for the Promotion of Graduate School Education"

1) Establish graduate school education based on degree programs.
2) Train doctors who lead the creation and growth of a new society.
3) Enhance education through communication and cooperation with society; establish environments that allow students to pursue their future prospects.
4) Promote globalization of graduate school education.
5) Improve the quality of professional schools.

Source : Created by MEXT

Based on this platform, and in order to support the establishment of "Leading Graduate Schools" to train leaders who will work broadly and globally across industry, academia and government, the "Program for Leading Graduate Schools" was launched in FY 2011 so as to proceed with measures for the development of graduate school education.

MEXT and the Ministry of Economy, Trade and Industry also hold the "Industry-University Cooperative Roundtable Meeting for Human Resource Development" to create an effective connection between graduate training and accomplished professionals, such as doctors, who will become the leaders of Japanese society. In the meeting, 20 companies that lead Japan's industries in terms of research and development, and global deployment, and 12 universities working on the development and globalization of doctoral / master course education participated in a discussion to take concrete actions beyond the conventional boundaries that separate industry and academia. The first meeting was held in July 2011 and an action plan is going to be made public in the spring 2012 or later.

As requested by MEXT, the Science Council of Japan discussed the quality assurance of university education by field and offered an opinion on the development of the "Guideline for Curriculum

Formation," which was focused on the basic education all students should acquire to fulfill the expectations of MEXT in July 2010. To have an examination based on this report, a new board was organized, and they have discussed the development of the "Guideline for Curriculum Formation" for each field of study since June 2011.

(2) Support for entry into doctoral courses and diversification of career paths

In order to encourage talented students to proceed to a graduate school's doctoral course, it is necessary to ensure various types of career paths so that students can use their expertise not only at their universities but also in industrial sectors or local communities after graduating from their school, in addition to providing economic support while studying at their graduate school. For this reason, the government is promoting both economic support and career support for doctoral course students and graduates.

1) Support for entry into doctoral courses

MEXT is expanding competitive research funds that can be used for the Teaching Assistant program (TA), which lets graduate school students do educational assistant work to enhance their professional education, and the Research Assistant program (RA), which lets doctoral course students participate in research projects run by universities.

The Japan Student Services Organization (JASSO) is conducting a scholarship program to support students who have ability but find it financially difficult to attend a university, and students who have achieved an exceptional performance are exempted from repayment.

In addition, the Japan Society for the Promotion of Science is conducting the "Research Fellowship for Young Scientists Program (DC)," which offers research funds to students who have remarkable research ability among doctoral students in the latter stages of graduate school so that they can devote themselves to their research.

2) Diversification of career paths

MEXT is making efforts to train leaders who will work globally across industry, academia and government (refer to part 2 chapter 4 section 2, 1 (1)).

MEXT is also carrying out the "Promotion of Internship Program for Postdoctoral Fellow Program" to support universities that build carrier development support systems so that postdocs[1] can secure a variety of career paths both at home and abroad in addition to the possibility of becoming a faculty member or a researcher at independent administrative organizations focused on research and development. In FY 2011, 30 organizations made efforts such as conducting long-term internships, which exceeded three months.

In accordance with the "Basic Policy on Support for Diverse Career Paths for Young Postdoctoral Fellows to Be Employed through the MEXT Public Research Funds (December 2011, Human Resource Board of Science, Technology and Academy Council)," application requirements reflect the guideline that

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1 This refers to those who are working as fixed-term researchers at an university or a research institute among those who have obtained a doctorate or have left a doctoral course after being a student for at least the normal term of study and who have obtained designated credits (with the exception of professors, associate professors, lecturers, assistant professors, assistants, leaders of research groups and principal investigators).

when a university employs a young postdoctoral fellow through the MEXT Public Research Funds, it must produce a plan for career support activities and grasp career circumstances.

In addition, in order to improve the environments for activation of research activities, to enhance management of research and development at universities and to prepare diverse career paths beyond the limited scope of research jobs for human resources in S&T, MEXT is supporting the establishment and development of human resources on research management (research administrator) at universities.

JST is providing a researchers database[1] that lists information on researchers who are looking for a job and recruitment information regarding research jobs in the industry, academia and government to support the development of diverse career paths.

The National Institute of Advanced Industrial Science and Technology is making efforts to employ researchers who have a doctorate in joint research projects based on a cooperative agreement with businesses, and to train them so that they can contribute from day one. It is necessary to provide industry with leading researchers who have a profound knowledge in their field of specialty in addition to having a strong communication ability and the cooperative attitude necessary for working together with professionals in different fields. AIST is, therefore, conducting "AIST Innovation School" to provide postdocs and doctoral students with a practical education, which includes participation in classroom training, research projects and On the Job Training (OJT) at companies.

(3) Engineer training and skill development

Industrial sectors and the engineers supporting them play a core role in the promotion of STI. In addition, in accordance with the advancement and integration of technologies, the qualities and skills required of engineers are becoming increasingly sophisticated and diversified. For this reason, the government is making efforts for the training of leading engineers and for skill development in response to such changes.

In order to further enhance engineer training, MEXT held the "Cooperators Meeting for Practical Engineer Education at University" and made a report on the quality of training methods and skills required of engineers and on the quality assurance of engineer education in June 2010. Based on the report, research was conducted regarding the "performance objectives of each field," which indicates the performance objectives common to all students in practical engineer education at universities. Furthermore, the degrees of achievement leading to "the vision of a desired engineer" were shown in the concrete terms of learning outcomes.

MEXT also provides the "Professional Engineer" system, which grants the certification of "Professional Engineer" to engineers who conduct practice on matters of planning, design, etc., that require advanced professional practical abilities in scientific and technological matters.

In order to become a Professional Engineer, engineers must pass the Professional Engineer examination held in 21 disciplines every year and obtain registration. The Professional Engineer examinations are divided into the First-Step Professional Engineer examination, which requires the same level of professional knowledge as the science and engineering graduate has, and the Second-Step Professional Engineer examination, which requires enough advanced professional practical abilities to become a

1 http://jrecin.jst.go.jp/

Professional Engineer. In FY 2011, 3,812 candidates passed the First-Step Professional Engineer examination, and 3,828 candidates passed the Second-Step Professional Engineer examination. The successful candidates in each discipline of the Second-Step examination are shown below (Table 2-4-3).

Table 2-4-3/ Successful Candidates in each discipline of the Second-Step Professional Engineer Examination (FY 2011)

Technical Disciplines	Applicant (Persons)	Certified (Persons)	Rate of certified people (%)
Mechanical Engineering	983	230	23.4
Marine & Ocean	6	1	16.7
Aerospace	27	4	14.8
Electrical & Electronics Engineering	1,457	228	15.6
Chemistry	126	28	22.2
Textiles	34	10	29.4
Metals	121	33	27.3
Mining	32	7	21.9
Civil Engineering	14,352	1,798	12.5
Water Supply & Sewerage	1,671	257	15.4
Environmental Engineering	658	90	13.7

Technical Disciplines	Applicant (Persons)	Certified (Persons)	Rate of certified people (%)
Agriculture	792	173	21.8
Forest	291	62	21.3
Fisheries	139	24	17.3
Industrial Engineering	145	38	26.2
Information Engineering	564	58	10.3
Applied Science	713	127	17.8
Biotechnology & Bioengineering	75	20	26.7
Environment	656	99	15.1
Nuclear & Radiation	125	23	18.4
Comprehensive Technical Management	3,719	518	13.9

Source: Created by MEXT

In addition, the JST offers on-line self-teaching materials[1] regarding each discipline and the common area of S&T.

2 Training for Creative, Quality Researchers

(1) Establishment of fair and highly transparent assessment systems

In order to train creative quality researchers, it is necessary to provide young researchers with opportunities for independence and to increase the number of posts for them so that they may establish a

1 http://weblearningplaza.jst.go.jp/

career path.

MEXT is supporting the "Tenure Track System," [1] which allows quality human resources to be employed by universities and public research institutes through a fair and highly transparent employment system (refer to Part 2 Chapter 4 Section 2, 2 (2)).

(2) Improvement of career paths for researchers

In order to train quality researchers, it is necessary to improve career paths for young researchers as well as to secure posts for them. In so doing, it is significant to increase the mobility of researchers in order for researchers to accumulate experiences in various research environments and to expand their human networks and broaden their views as a researcher. On the other hand, it is pointed out that, in some cases, efforts to improve mobility may discourage young researchers from working on research, so the government will develop career paths that can provide stability to researchers, yet still ensure a certain level of mobility.

In order to promote the improvement of the environments that allow young researchers to conduct research independently, MEXT is carrying out the "Program to Disseminate Tenure Track System," which provides universities conducting the Tenure Track System with startup research expenses so that tenure track teachers can establish the system and broaden its scope. In 2011, 32 organizations (102 tenure track teachers to be supported) were selected.

The Japan Society for the Promotion of Science is conducting the "Research Fellowship for Young Scientists," which provides young, quality researchers with opportunities to devote themselves to their research and lets them independently select study subjects with no conceptual restrictions in order to develop and secure creative researchers who will lead the future of Japan's academic research.

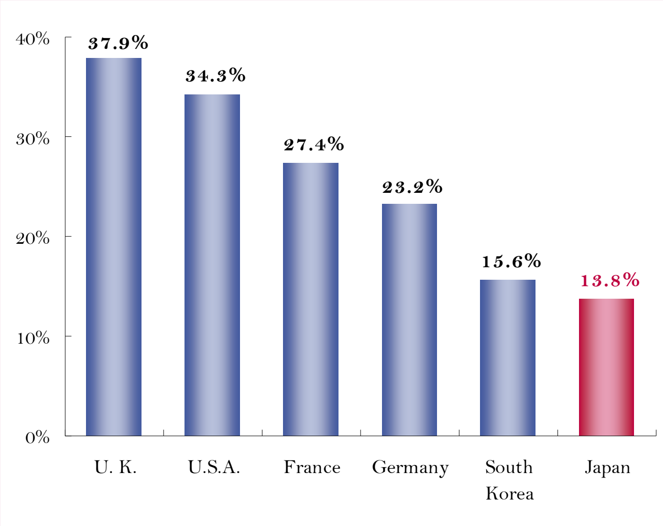
The National Agriculture and Food Research Organization (NARO) has set up special reserves in the budget to support the development of technical seeds by young researchers in its "Basic Research Promotion Program for Creation of Innovation."

(3) Promoting the activities of female researchers

Japan has been promoting the appointment and activities of female researchers under the 4th Basic Plan by trying to quickly achieve the numeric targets for the adoption of female researchers set under the 3rd Basic Plan (25% for natural sciences as a whole) and even aims to raise the target to 30%. As a result, the number of female researchers is increasing year by year, but is still at a low level when compared to foreign countries (Figure 2-4-4). The appointment of female researchers is very significant for not only the enhancement of gender equality but also for improving organizational creativity through the adoption of various viewpoints and ideas and for stimulating research activities. For this reason, the government is improving the environment to allow for further appointment of female researchers and the promotion of their activities.

[1] System where young researchers employed through fair and highly transparent selection process and able to gain experience as an independent researcher having an employment condition such as having a specific period of employment before getting a more stable profession after a review.

Figure2-4-4/ Percentage of Female Researchers in Some Countries



Source: Japan: The Statistics Bureau of Ministry of Internal Affairs and Communications "Report on the Survey of Research and Development (in 2011)" (as of 2010), The U. S. A.: "NSF Science and Engineering Indicators 2006" (as of 2003), Other Countries: OECD "Main Science and Technology Indicators 2010" (The U.K.: as of 2008, France: as of 2005, Germany: as of 2006, South Korea: as of 2008)

MEXT is conducting the "Program to Support Research Activities of Female Researchers," which provides funding for universities that improve the environments for researchers who need to cope with childbirth, childcare and nursing care. The fund helps with expenses for employing coordinators who promote support activities and for employing research assistants who support research activities while researchers are in childbirth, or who are using childcare or nursing care. As of FY 2011, the program is supporting 32 organizations, and starting from FY 2011, the program will be expanded to all academic fields, including humanities and social sciences; furthermore, male researchers who are also female researchers' spouses are to be supported.

In the "Research Fellowship for Young Scientists Program," the Japan Society for the Promotion of Science has been offering research scholarships since FY 2006 to quality researchers so that they can smoothly return to their research work after taking a leave of absence from their research because of childbirth and childcare.

The National Institute of Advanced Industrial Science and Technology (AIST) has organized a consortium (Diversity Support Office) that consists of 19 universities and research institutes nationwide and has been promoting dissemination and expansion of the measures for gender equality in cooperation with the consortium, sharing information and exchanging opinions regarding researchers' balanced work and life, career development and motivation enhancement.

As one of the efforts to develop human resources that will lead the next generation, MEXT is conducting the "Project to Encourage Female Students of Lower/Upper Secondary Schools to Follow the Science Career Paths," which creates opportunities for girls to mingle with female researchers and engineers who are actively working in the field of S&T. The project also provides classroom laboratories and visiting lectures to encourage female students to follow science career paths.

In order to support female students of high schools and universities who want to study or work in the fields of science and engineering, the Cabinet Office is offering information, such as advice from female mentors employed at companies actively working in these fields, entitling it "Challenge Champaign—Choice of Science and Engineering Fields by Female Students of High Schools and Universities—."

3 Development of Human Resources Who Can Lead the Next Generation

In order to develop S&T related to human resources, it is important to develop children's interest in science and mathematics at elementary and secondary schools, so as to increase the population of children interested in such subjects, and to identify talented children and develop their abilities. The following efforts are, therefore, being made comprehensively to enrich the education of science and mathematics.

(1) Development of intellectual curiosity in children

In order to enhance observations and experiments in science classes and to improve qualities of teachers, JST is conducting the "Science Education Assistants Allocation Program," which supports the efforts to allocate external human resources, such as graduate school students and retired teachers, to elementary schools as science-class assistants. It is also carrying out the "Establishing Training Centers for Core Science Teachers" program, to support efforts in which universities (graduate schools) collaborate with the board of education to train elementary and junior-high school teachers who have great teaching skills in science and mathematics and who can play a core role in teaching science and mathematics at schools and local facilities. This program supported 14 universities in FY 2011. In addition, the "Science Partnership Project" is supporting hands-on and problem-solving activities of schools and boards of education in collaboration with universities and science centers in order to further enhance children's interest in science, technology and mathematics and develop their inquiring minds. Specifically, the project holds learning activities, such as observations and experiments, with front-line researchers and engineers as lecturers. It also holds camping-style learning activities at most advanced research laboratories (Science Camp). Furthermore, to provide learning opportunities appropriate to children's curiosity and inquiring minds, digital learning materials for science education have been developed and offered to schools nationwide through the Internet etc.

In order to develop human resources for S&T, it is necessary to improve science and mathematics education as well as to enhance scientific thinking and expression, and an interest in science. It is also necessary to understand students' tendencies to avoid science and to solve this problem. Based on these understandings, MEXT will begin to add science for the FY 2012 nationwide surveys on academic performance and learning situations. MEXT is also promoting the systematic improvement of equipment, such as laboratory instruments used for science, arithmetic and mathematics education at elementary schools and lower/upper secondary schools based on the "Science Education Promotion Act" (Act No. 186 of 1953).

The National Institution for Youth Education has set up the "Children's Dream Fund" and is assisting various activities, such as a children's hands-on science experience conducted by private organizations.

The Ministry of Economy, Trade and Industry is supporting the transmission of information by the

"Environmental Consortium for Scientific Technique[1]," such as holding symposiums and collecting information on human resource development. In addition, to spread knowledge about intellectual property, the Patent Office is supporting high schools and colleges of technology through the National Center for Industrial Property Information and Training in order to practically develop human resources based on intellectual property.

(2) Development of the individuality and abilities of talented children

MEXT is making efforts to develop international human resources for S&T for the future by designating high schools that focus on science and mathematics education as the "Super Science High School (SSH)" and is having JST support each designated school. Specifically, the efforts include the development and practice of curricula not based on the National Curriculum Standards, and the promotion of task-oriented research and the sharing of results with other schools. In FY 2011, 145 high schools nationwide made distinctive efforts. In addition, to develop promising human resources for S&T in the stage of undergraduate schools, MEXT is conducting the "Science and Mathematics Students Support Project," which focuses on efforts to further develop motivation and ability among students who have a strong desire to study science and mathematics at universities that have scientific departments. Furthermore, it held a new research competition "Science Intercollegiate," as an opportunity for nationwide undergraduate students who are learning natural sciences and had them present the results of their own studies and compete against each other at the National Museum of Emerging Science and Innovation and the Tokyo International Exchange Center Plaza Heisei in FY 2011.

JST holds the International Science Olympiads in the areas of science, such as mathematics, physics, chemistry, biology, informatics, geography and earth science as well as holding national versions of the competitions held in the international contest for S&T, which is hosted by the International Science and Engineering Fair (ISEF). It also dispatches Japan's national team to international competitions and supports the holdings of international competition in Japan (Figure 2-4-5). In addition, JST holds the "Japan High School Science Championships" as an opportunity for nationwide high school students to compete between schools by testing students' knowledge and technical skills in multiple areas in science, technology and mathematics. In FY 2011, the first national competition was held at the Hyogo Prefectural Gymnasium with 363 students in 48 teams (one team as a special entry) representing prefectures across the country (Figure 2-4-6).

Furthermore, MEXT, the Japan Patent Office, the Japan Patent Attorneys Association and the National Center for Industrial Property Information and Training hold patent contests and design patent contests for high school and university students to deepen their understanding and interest in intellectual property among the Japanese public. Excellent inventions and designs among applications are honored, and the organizer supports students' actual applications of patents and design registrations as well as their acquisition of rights.

[1] Organized by academic societies and other organizations that work on the development of quality human resources for science and technology who will lead the next generation

Figure 2-4-5/ Prize Winners of the International Science and Technology Contest in FY 2011

Winners of the International Mathematical Olympiad, Holland

From the left

Takuma Kitamura 11th gr. Nada Jr. & Sr. H.S., Gold

Shogo Murai 11th gr. The Kaisei Jr. & Sr. H.S. Bronze

Ryu Minegishi 12th gr. Shizuoka Prefectural Shimizu Higashi High School Silver

Kensuke Yoshida 12th gr. Tsukuba University's Komaba High School Gold

Hiroki Koshiyama 12th gr. Koyogakuin Jr. & Sr. H.S., Silver

Genki Shimizu 12th gr. Nada Jr. & Sr. H.S., Bronze

Winners of the International Physics Olympiad (in Thailand)

From the left

Yuichi Enoki 10th gr. Nada Jr. & Sr. H.S., Gold

Kazumi Kasaura 11th gr. The Kaisei Jr. & Sr. H.S., Silver

Ryotaro Sato 12th gr. Shukoh Middle School Gold

Kohei Kawabata 11th gr. Nada Jr. & Sr. H.S., Silver

Atsushi Yamamura 12th gr Nada Jr. & Sr. H. S., Gold

Winners of the International Chemistry Olympiad, Turkey

From the left

Hayate Saito 12th gr. Nada Jr. & Sr. H.S., Silver

Tomohiro Soejima 11th gr. Rikkyo Ikebukuro Senior High School Gold

Saori Kurihara 12th gr. Hokkaido Sapporo Nishi High School Silver

Hiroki Uratani 12th gr. Shiga Prefectural Zeze H.S., Silver

Winners of the International Biology Olympiad, Taiwan

From the left

Hiroki Matsuda 12th gr. Tsukuba University's Komaba High School Gold

Hideaki Kume 12th gr. Tsukuba University's Komaba High School Gold

Yuta Otsuka 12th gr. Chiba Prefectural Funabashi Senior High School Gold

Tomoyuki Mikami 12th gr. La Salle High School Silver

Winners of the International Olympiad in Informatics,

From the left

Shogo Murai	11th gr. Kaisei High School Gold
Masaki Hara	12th gr. Tsukuba University's Komaba High School Silver
Kensuke Imanishi	12th gr. Yachiyoshoin High School Silver
Shinya Shiroshita	12th gr. Nada Jr. & Sr. H.S., Silver

Winners of the International Earth Science Olympiad, Italy

From the left

Ryo Matsuoka	12th gr. Hokkaido Asahikawa Nishi High School Bronze
Keishiro Azami	12th gr. Saitama Prefecture Kawagoe Senior High School Silver
Midori Watanabe	10th gr. Oin high school Gold
Takehiro Matsuzawa	11th gr. Eiko Gakuen Senior High School Silver

Winners of the International Science and Engineering Fair (ISEF), Los Angeles, U.S.A

From the left

Rushia Kanai	12th gr. Kagoshima Prefecture Kinkowan Senior High School (Fourth prize at earth science category)
Nobutada Kawazoe	12th gr. Kagoshima Prefecture Kinkowan Senior High School (Fourth prize at earth science category)
Taiki Maehata	12th gr. Kagoshima Prefecture Kinkowan Senior High School (Fourth prize at earth science category)
Riou Tanaka	11th gr. Chiba Prefectural Chiba Senior High School (Third prize at earth science category)

Source: Created by MEXT

Figure 2-4-6/ The First Japan High School Science Championships

Winner: Saitama Prefectural Urawa High School

From the front left

Takuya Otsuka (11th gr.) Yudai Hara (11th gr.)

Nobutada Kato (11th gr.)

From the back left

Yuta Shirogane (11th gr.) Koki Kato (11th gr.)

Tomoki Shinozawa (11th gr.) Kei Munesato (11th gr.)

* Absentee Hayato Nishi (11th gr.)
* School-year levels are listed at students' levels at the time of winning the prize

Source: Created by MEXT

Column 2-7

The first Science Intercollegiate

In order for our nation to steadily promote innovation of S&T into the future and to leverage it for sustainable growth and development of the nation, it is necessary to promote the development of human resources that will lead the next generation consistently from the stage of elementary and secondary education to the training them as researchers and engineers. While measures to develop various human resources for science and development have been implemented at the stage of elementary and secondary education as well as graduate schools up until now, it is also important to improve the measures at the stage of undergraduate schools which connect the two stages above. Unlike high school students who have various opportunities to present the results of their study, there are few opportunities for undergraduate students in the field of natural science to train themselves through competition and, thus, enhance motivation for their research activities in the future by giving presentations on the results of what they are usually studying by themselves.

For this reason, MEXT held the first "Science Intercollegiate," at the National Museum of Emerging Science and Innovation and the Tokyo International Exchange Center Plaza Heisei for two days on Saturday, February 18, and Sunday, February 19, 2012, to provide an opportunity for nationwide graduate students who are studying natural sciences to present the results of their own research, aiming to develop creative human resources who have the ability of investigation. In this meeting for research presentation, 126 teams (40 in the oral presentation category and 86 in the panel presentation category), were selected from 165 applications through document review and gave presentations on their own research. As a result, 16 teams were honored, and Mr. Seiyo Oh, a student of Tokyo University, was given the Ministry of Education and Science Award by Mr. Hirano, the Minister of Education and Science.

MEXT plans to further promote the Science Intercollegiate based on the opinions of concerned parties in the future.

○ Ministry of Education and Science Award
University of Tokyo, Seiyo Oh
"The rotation dependence of transition lifespan of hydrogen molecules and its isotope effect using the two-photon resonance laser-induced fluorescence techniques"

○ Japan Science and Technology Agency President Award
Yonago National College of Technology, Akihumi Murao
"Production of a lithium ion secondary battery with a new polymer as a cathode active material and its battery characteristics"

The taking of a commemorative photograph of Mr. Oh and Mr. Hirano, the Minister of Education and Science
Courtesy of MEXT

The taking of a commemorative photograph of Mr. Murao and Mr. Kawakami, President of Japan Science and Technology Agency
Courtesy of MEXT