



OIST

OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY GRADUATE UNIVERSITY





■ Message from the President



The Okinawa Institute of Science and Technology Graduate University (OIST) will conduct outstanding education and research in science and technology, and thus contribute to the sustainable development of Okinawa, and promote and sustain the advancement of science and technology in Japan and throughout the world.

About fifty world-class faculty in the life, physical and environmental sciences have joined OIST as leaders of the University's research units. Over half of the faculty and students are recruited from outside Japan, and all education and research is conducted entirely in English. The absence of academic departments, the strong emphasis on shared/common research tools and the imaginative layout of the research space, provide a natural home for truly inter-disciplinary research. Each year, starting in September 2012, about twenty graduate students, selected from amongst the best available worldwide, will begin their studies at OIST. While the curriculum will provide the students with a strong grounding in their core discipline, courses will also be required to extend their discipline-specific knowledge in ways that promote cross-disciplinary research.

One of the key objectives in creating OIST is to contribute to the promotion and self-sustaining development of Okinawa. The combination of highly imaginative academic minds and sophisticated research infrastructure will generate scientific breakthroughs in diverse areas, which will be the driving force for innovation and technology development on Okinawa.

The Government of Japan has demonstrated great vision and has provided sustained support in establishing OIST and I am confident that OIST will be a leader in transforming the way science and education is carried out globally.

A handwritten signature in black ink that reads "Jonathan Dorfan". The signature is written in a cursive, flowing style.

Jonathan Dorfan

President, Okinawa Institute of Science and Technology

Introduction to the Graduate University

The project to establish the Okinawa Institute of Science and Technology was first announced in June 2001 by then State Minister for Okinawa and Northern Territories Affairs, Science and Technology Policy.

Objective

The objective of the graduate university is to contribute to the self-sustaining development of Okinawa and the academic advancement of worldwide science and technology by conducting world-class research and education in science and technology in Okinawa.



Key Concepts

The objective embodies the following concepts.

Best in the World	The graduate university is for top-class scientists who conduct “best in the world” research and education in science and technology.
Flexible	In compliance with government regulations, an unconventional administrative structure and high-level of government funding support the graduate university to become one of the best-in-the-world, and assure the autonomy and flexible management of the corporation.
International	More than half of the faculty and students are non-Japanese, and English is the official language.
Global Networking	Develop partnerships with leading universities and research institutions worldwide with OIST as a hub in the international network of scientists, particularly in the Asia-Pacific region.
Collaboration with Industry	Establish attractive schemes for collaboration with the private sector. Form a scientific industrial cluster by attracting corporate laboratories and venture businesses.

Okinawa Institute of Science and Technology School Corporation Act

In order to realize the project, the Okinawa Institute of Science and Technology School Corporation Bill was submitted to the Japanese Diet in March 2009 and unanimously passed by the House of Representatives and the House of Councilors. The Okinawa Institute of Science and Technology School Corporation Act was enacted on July 10, 2009. From the perspective of respecting the autonomy and the management flexibility of the school, the Act stipulates the establishment of the Graduate University as an independent special school corporation. The Act came into effect on November 1, 2011.

Outline of the Graduate University

- Single interdisciplinary graduate program
- Five-year integrated doctoral program
- About 20 students per academic year with about 50 faculty members
- Education and research conducted in English
- At least half of the students and faculty members to be non-Japanese

Research Activities



The OIST graduate education and research program is cross-disciplinary and aims to be at the leading edge of research in science and technology, including the Life Sciences, the Physical Sciences, and Mathematics. To lay the foundation for the Graduate University, 44 Research Units have been launched so far, with research in five major areas of Neuroscience, Molecular Sciences, Mathematical Sciences, Environmental and Ecological Sciences, and Physical Sciences. As of November 2011, OIST has over 200 researchers, of whom approximately 80 are international, and about 100 administrative staff who support the researchers.

Historical Milestones

2001	June	Former Minister of State for Okinawa and Northern Territories Affairs, and Science and Technology Policy Koji Omi announced a plan to establish a new graduate university in Okinawa.
	August	The first meeting of the study committee, chaired by Dr. Akito Arima, former President of the University of Tokyo, took place. (A total of eight meetings were held.)
	April	The first meeting of the International Advisory Committee (IAC) took place in Los Angeles. (The participants included nine prominent foreign researchers, of which three were Nobel Laureates.)
2002	May	Former Prime Minister Junichiro Koizumi pledged that the Japanese government will promote the project to establish the new graduate university in Okinawa at the 30th anniversary ceremony marking the reversion of Okinawa to Japan.
	July	Three candidate sites for the graduate university campus were recommended by the Okinawa Prefectural Government to the Cabinet Office.
2003	January	Former Prime Minister Junichiro Koizumi stated in his keynote address to the Diet that the Japanese government will promote the project.
	April	The site in Onna Village was selected as a venue for the campus.
	July	The first meeting of the Council took place in Tokyo.
	October	The first international symposium took place at Bankoku Shinryokan in Okinawa.
	February	Four proposals for the Initial Research Project (IRP) were selected as preliminary research projects for the graduate university.
2004	March	The first international workshop took place in Okinawa.
	July	The first Board of Governors (BOG) meeting took place in Tokyo.
	December	Ministers agreed to establish a new research institute in September 2005, as an organization leading up to the new graduate university.
2005	March	The bill to establish the Okinawa Institute of Science and Technology Promotion Corporation (OIST P.C.) as the organization that prepares for the opening of the graduate university was approved by the Diet.
	August	Dr. Sydney Brenner was designated as the first President of OIST P.C.
	September	Okinawa Institute of Science and Technology Promotion Corporation (OIST P.C.) became an independent administrative institution.
2006	January	The first BOG meeting, after the establishment of OIST P.C., took place in San Francisco.
	April	The renovation of former Hakuun-so completed and the facility was named the Seaside House.
	May	The second BOG meeting took place in Tokyo.
	December	The third BOG meeting took place in Tokyo.



2007	March	The first phase of the site preparation works commenced.
	April	Groundbreaking ceremony took place at the main campus site.
	July	The fourth BOG meeting took place in Okinawa.
2008	September	The 2nd anniversary event marking OIST P.C. establishment took place at a hotel in Onna Village, Okinawa.
	January	The fifth BOG meeting took place in Tokyo.
	March	Construction of Laboratory 1 and the Center Building commenced.
	June	G8 Science and Technology Ministerial Satellite Workshop on Environment and Energy Issues.
	July	The sixth BOG meeting took place in Okinawa and Tokyo. The Blueprint for the OIST Graduate University was approved.
2009	November	Construction of the Faculty Housing at the Seaside Campus completed. Open House 2008 took place at Okinawa Industrial and Technology Center.
	February	The seventh BOG meeting took place in Tokyo.
	March	Submission of the Okinawa Institute of Science and Technology School Corporation Bill to the Diet.
	June 11	The House of Representatives unanimously passed the Okinawa Institute of Science and Technology School Corporation Bill.
	July 3	The House of Councilors unanimously passed the Okinawa Institute of Science and Technology School Corporation Bill.
July 10	The Okinawa Institute of Science and Technology School Corporation Act was enacted.	
October	The eighth BOG meeting and the first meeting of the Establishing Members for OIST took place in Tokyo.	
November	Open House 2009 took place at Okinawa Industrial Technology Center	



2010

- March Initial use of the campus buildings commenced.
The ninth BOG meeting and the second meeting of the Establishing Members for OIST took place in Okinawa.
- July The tenth BOG meeting and the third meeting of the Establishing Members for OIST took place in Tokyo.
- August Onna / OIST Children's School of Science took place at Tancha Community Center.
- October The eleventh BOG meeting and the fourth meeting of the Establishing Members for OIST took place in Okinawa.
- November Construction of Laboratory 2 and the Auditorium commenced.
Open Campus 2010 took place at the OIST Campus in Onna Village.

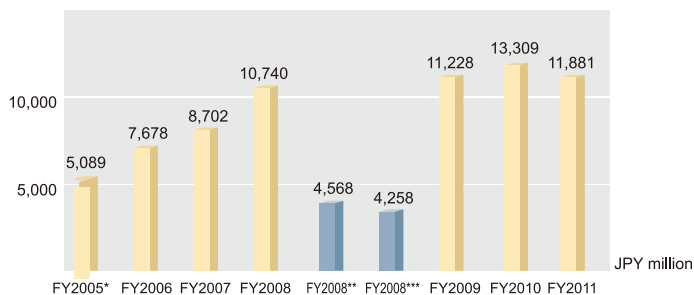
2011

- February The twelfth BOG meeting and the fifth meeting of the Establishing Members for OIST took place in Okinawa.
- March Application for approval of the OIST School Corporation to the Minister of Education, Culture, Sports, Science and Technology.

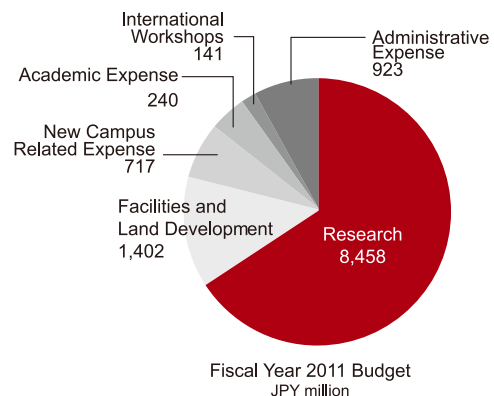
Application for approval of the OIST (Graduate University) to the Minister of Education, Culture, Sports, Science and Technology.
- June The thirteenth BOG meeting and the sixth meeting of the Establishing Members for OIST took place in Okinawa.
- November The Okinawa Institute of Science and Technology School Corporation Inauguration.

Budget

The government subsidy for OIST comes in two areas: a subsidy for operations and a subsidy for facilities. Since its launch in September 2005, the budget of OIST has steadily increased, and with continued funding, the Center Building, Laboratory 1, Laboratory 2 and Laboratory 3 will be gradually completed to accommodate the target of about 50 PIs at the time of the opening of the graduate university in FY2012.



* FY2005 budget is made up of two parts. One is the budget for the Cabinet Office from April to August 2005, and the other is the budget for OIST P.C. from September 2005 to March 2006.
 ** FY2008 1st Supplementary Budget
 *** FY2008 2nd Supplementary Budget



Faculty



Brain Mechanisms for Behaviour Unit
Dr. Gordon Arbuthnott



Biodiversity and Biocomplexity Unit
Dr. Evan Economo



Genomics and Regulatory Systems Unit
Dr. Nicholas Luscombe



Collective Interactions Unit
Dr. Mahesh Bandi



Biological Systems Unit
Dr. Igor Goryanin



Integrative Systems Biology Unit
Dr. Tatiana Marquez-Lago



Molecular Genetics Unit
Dr. Sydney Brenner



Mathematical and Theoretical Physics Unit
Dr. Shinobu Hikami



Information Processing Biology Unit
Dr. Ichiro Maruyama



Quantum Systems Unit
Dr. Thomas Busch



Unit on Neural Systems and Behavior
Dr. Masaki Isoda



Developmental Neurobiology Unit
Dr. Ichiro Masai



Fluid Mechanics Unit
Dr. Pinaki Chakraborty



Microbiology and Biochemistry of Secondary Metabolites Unit
Dr. Holger Jenke-Kodama



Ecology and Evolution Unit
Dr. Alexander Mikheyev



Femtosecond Spectroscopy Unit
Dr. Keshav Dani



Open Biology Unit
Dr. Hiroaki Kitano



Physics and Biology Unit
Dr. Jonathan Miller



Computational Neuroscience Unit
Dr. Erik De Schutter



Quantum Dynamics Unit
Dr. Denis Konstantinov



Marine Biophysics Unit
Dr. Satoshi Mitarai



Neural Computation Unit
Dr. Kenji Doya



Optical Neuroimaging Unit
Dr. Bernd Kuhn



Light-Matter Interactions Unit
Dr. Sile Nic Chormaic



Developmental Signalling Unit
Dr. Mary Ann Price



Structural Cellular Biology Unit
Dr. Ulf Skoglund



Molecular Cryo-Electron Microscopy Unit
Dr. Matthias Wolf



Energy Materials and Surface Sciences Unit
Dr. Yabing Qi



Nanoparticles by Design for Nanotechnology and Biomedical Applications Unit
Dr. Mukhles Ibrahim Sowwan



Cell Signal Unit
Dr. Tadashi Yamamoto



Trans-Membrane Trafficking Unit
Dr. Fadel Samatey



Cellular and Molecular Synaptic Function Unit
Dr. Tomoyuki Takahashi



G0 Cell Unit
Dr. Mitsuhiro Yanagida



Marine Genomics Unit
Dr. Noriyuki Satoh



Chemistry and Chemical Bioengineering Unit
Dr. Fujie Tanaka



Neuronal Mechanism for Critical Period Unit
Dr. Yoko Yazaki-Sugiyama



Plant Epigenetics Unit
Dr. Hidetoshi Saze



Electron Microscopy Unit
Dr. Akira Tonomura

As of November 1, 2011



Theory of Quantum Matter Unit
Dr. Nic Shannon



Human Developmental Neurobiology Unit
Dr. Gail Tripp



Quantum Wave Microscopy Unit
Dr. Tsumoru Shintake



Formation and Regulation of Neuronal Connectivity Research Unit
Dr. David Van Vactor



Mathematical Biology Unit
Dr. Robert Sinclair



Neurobiology Research Unit
Dr. Jeff Wickens



■ Educational Activities



OIST has been hosting international workshops and summer courses to enhance cooperation with research and academic institutions in Japan and overseas. These educational activities also help to promote the graduate university project in the worldwide scientific community and to train young researchers who have the potential to participate in the project.

Okinawa Computational Neuroscience Course (OCNC)

Computational neuroscience is the study of the brain, neurons and neural networks using computational methods. The Okinawa Computational Neuroscience Course (OCNC) is an interdisciplinary course that links neuroscience and information science. Since 2004, the annual course has brought together renowned scientists and distinguished researchers, as well as doctoral and graduate students from Japan and overseas for weeks of lectures, discussions and student projects. The course has provided participants with the opportunity to learn about the latest research in a beautiful environment and truly international setting.

Date	Participants
2004 November 9-19	OCNC 2004 74
2005 July 1-10	OCNC 2005 61
2006 June 26-July 7	OCNC 2006 65
2007 June 26-July 11	OCNC 2007 58
2008 June 16-July 3	OCNC 2008 57
2009 June 15-July 2	OCNC 2009 55
2010 June 14-July 1	OCNC 2010 53
2011 June 13-30	OCNC 2011 79

International Symposia and Workshops

Date	Name of Symposiums / Workshops	Participants	
2006	March	Cell Regulations in Division and Arrest Workshop	55
	April	Single Molecule Analysis	46
	May	Future Directions in Primate Brain Research	34
2007	February	OIST-Korea Workshop "Neuroscience and Beyond"	35
		Systems Biology of Yeast Signaling	21
	March	International Workshop on Cognitive Neurobiology	47
		The 2nd International Workshop on Cell Regulations in Division and Arrest	72
		The Future of Electron Microscopy	23
	April	Inverse Problems and Biology	31
	November	OIST-Salk Joint Neuroscience Meeting	38
	December	Hardware and Software for Large-Scale Biological Computing in the Next Decade	29
2008	January	OIST-HSFP International Workshop on Neural Control of Attention, Perception and Learning	29
		SBGN Super-Hackathon Workshop	31
	March	Systems Biology of MAPK Pathways Workshop	35
	April	The 3rd International Workshop on Cell Regulations in Division and Arrest Under Stress	66
	October	Open Problems in the Neuroscience of Decision Making	37
	November	Multi-Scale Phenomena in Biology	35
		Gradients and Signalling: from chemotaxis to development	62
	December	Winter Course "Evolution of Complex Systems" 2008	41
2009	May	Fundamentals of Quantum Mechanics and Its Applications	41
	September	Reinforcement and Attention Deficit Hyperactivity Disorder (ADHD)	33
	November	DNA Topology Course 2009	37
		The Retina: Neural Stem Cells and Photoreceptor Degeneration	57
	November-December	The 4th International Workshop on Cell Regulation in Division and Arrest	72
	December	Winter Course "Evolution of Complex Systems" 2009	46
2010	February	"Garuda One" Workshop on Software Platform for Healthcare Research and Services	21
	May-June	Quantitative Evolutionary and Comparative Genomics	65
	July	Developmental Neurobiology Course 2010	59
	October	JAPAN-U.S.-Brain Research Cooperative Program Workshop	29
		"The NeuroPhysiome: Bridging Computational Neuroscience and Systems Biology"	
		International Symposium and Workshop: Toward the Development of an R&D Cluster in Okinawa	170
	December	Computational Ecology Workshop	25
		Winter Course "Evolution of Complex Systems" 2010	50
2011	February	"Garuda Four" Workshop on Software Platform for Healthcare Research and Services	25



The location for the Institute in Onna-son was decided in April 2003. The Onna-son campus is located on subtropical forest-covered hillsides and has commanding views of the western coast of the island. This idyllic location offers not only the ideal research environment for a world-class graduate university, but also the necessary space for the current facilities, and potential for future development. Preserving the environment is the top priority for all aspects of the graduate university development.

Key concepts

The campus master plan revolves around the goal of establishing a highly-original, internationally-oriented and “best-in-the-world” graduate university. The three basic concepts for the plan are:

Technology Balanced with Environmental Harmony

The campus is home to hundreds of land and marine species that live in the area. Environmental concerns are taken into account to preserve the natural treasure. Special consideration for the summer heat and typhoons are also taken into consideration. State-of-the-art IT infrastructure is installed throughout the campus to help create an innovative research environment for researchers. Computing facilities provide general purpose computing resources as well as exotic architectures selected to provide a significant impact on scientific discovery.

Interdisciplinary Collaborations

In order to promote integrative research activities, a three-dimensional lab-design model is employed. It will encourage cross-collaboration between disciplines. Buildings are compactly designed to enable easy vertical transfer between floors. In order to enhance communications among researchers and between researchers and students, the Village Zone, including common areas, is being established. In addition, service amenities such as shops, a childcare center, clinic, and sports facilities will be located on the campus. The campus design promotes cultural exchange and events to be jointly held by the Institute and local communities.

Industry Cooperation and Networking

In order to pursue world-class research and education of science and technology in Okinawa, cooperation with first-class research institutions and universities in Japan and overseas is important. In order to facilitate this objective, special consideration is taken into account to secure spaces for research and lodging for visiting professors and exchange students, as well as spaces for international symposiums and workshops. Moreover, in order to contribute to the development of the self-sustaining economy on the island, collaboration with industry is indispensable. The campus design aims to enhance cooperation with industry including joint research and collaboration with corporations, as well as commercialization of research for future development.

New Campus Construction

Facility Plan Summary

Main Campus

On the main campus, residence facilities are located along the main access road and research buildings are located on the hillside. These facilities are connected by a glass corridor suspended above a lake with a tunnel-shaped gallery and a 30-meter-high elevator. In addition to the residence facilities, the area called the Village Zone includes shops, a sports gym and other facilities for every day life of researchers, staff, local residents and visitors.

The research facilities, located closely together in an area called the Laboratory Zone, are situated in a cluster formation, locally concentrated but dispersed, and connected by skywalks. A library, an auditorium, and a cafeteria are centrally located in the research facility grounds. Laboratories 1, 2 and 3 house a total of approximately 50 faculty and their research units.

To create an ideal research environment, housing is being established within the Village Zone to allow students and researchers have easier access to labs, service facilities, etc. The housing, designed for families, couples without children, and singles, will be home to about 50% of students and researchers, while the remainder are expected to live off campus, depending on their individual needs, children's education, etc.

Seaside Campus

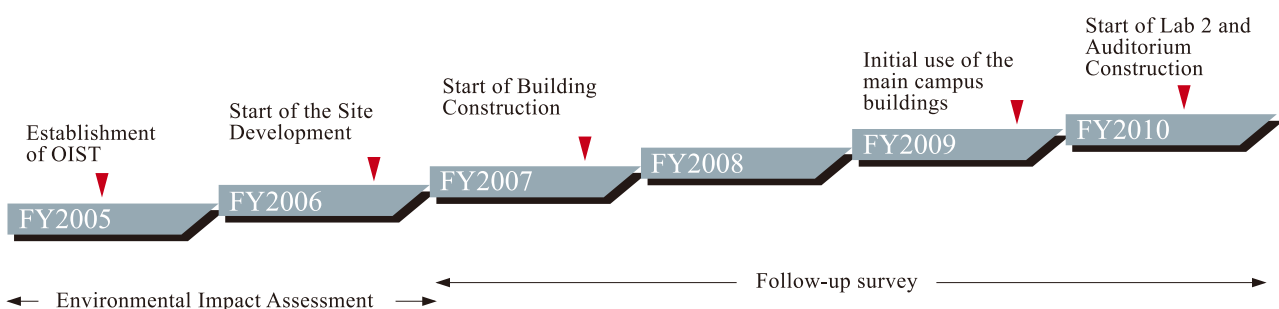
The seminar facility and faculty housing are located along the scenic seaside area. The Seaside House building is home to two research labs and the workshop/seminar facility.

Facility Dimensions

Approximately 70,000 m² of building space is planned for 50 faculty. The final plan targets to house 300 faculty with in 250,000m² building space.

Facility Planning Schedule

To develop an ecologically-friendly campus, OIST voluntarily launched a detailed impact assessment group that also involved the solicitation of concerns from local residents, environmental specialists and other scientists. Following the assessment, the main campus site development plan commenced in March 2007. The construction of Laboratory 1 and the Center Building, which began in spring 2007, was completed and their initial use began at the end of FY2009. The construction of Laboratory 2 and the Auditorium began in the fall of 2010, with the Auditorium and Lab 2 scheduled to completion in the spring of 2012.



Facilities

OIST Campus in Onna village

The use of Laboratory 1 and the Center Building, totaling 27,000m² in size, began in March 2010. The shape of the campus buildings has been designed to blend well with the landscape, in order to minimize the impact of the construction on the surrounding natural environment. The new buildings have also been equipped with an advanced wastewater treatment facility, with up to 65% of water being reused. In addition, 90 percent of the campus buildings use energy-efficient LED light bulbs, enabling the reduction of the annual emission of carbon dioxide by 137 tons in comparison with conventional light bulbs.

Laboratory 1 is comprised of biotechnology labs including an electron microscopy room and mass spectrometry room, and also has extensive open lab areas, as well as offices of the Faculty. The Center Building includes seminar rooms, the library, and the academic affairs and administrative office. One of the distinguishing features of the new buildings is its “open laboratory” design, which allows common use of research equipment and spaces as much as possible, in order to facilitate exchange among different researchers and to promote interdisciplinary research at OIST.

Seaside House in Onna Village

In March 2006, the former Hakuun-so in Onna Village was renamed OIST Seaside House, and the renovation work on the building was completed in April 2006. The multi-functional building hosts two research laboratories, and serves as a venue for international workshops and seminars.

Research Laboratories in Uruma City



Seaside House in Onna Village

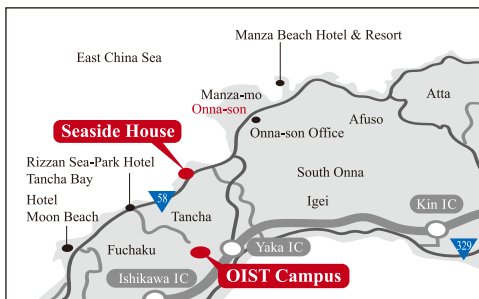


Okinawa Technology Research Exchange Center



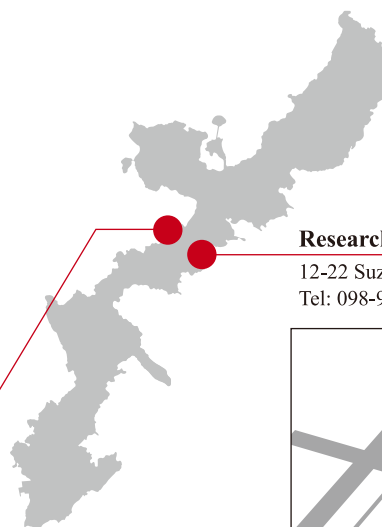
Okinawa Health Biotechnology Research & Development Center
Okinawa Industrial Technology Center Annex

ACCESS



OIST Campus
1919-1 Tancha, Onna-son, Okinawa,
Japan 904-0495
Tel: 098-966-8711 Fax: 098-966-2887

OIST Seaside House
7542 Onna-son, Okinawa, Japan 904-0411
Tel: 098-966-8712 Fax: 098-966-8715



Research Laboratories in Uruma City

12-22 Suzaki, Uruma, Okinawa, Japan 904-2234
Tel: 098-921-3835 Fax: 098-921-3836



Community Activities

OIST has hosted a number of lectures at local schools and public events involving the members of the Board of Governors and OIST researchers. These activities are part of our effort to raise the interests of youth in science and technology, and to promote the graduate university to local communities.

BOG Lecture July 10, 2010

Venue Okinawa Miyako Hotel,
Naha Kokusai Senior High School
Lecturer Dr. Tim Hunt



Faculty Lecture December 21, 2010

Venue OIST Campus
(with Nakadomari Junior High
School students in Onna Village)
Lecturer Dr. Ulf Skoglund



Faculty Lecture January 26, 2011

Venue Junior High School, Onna Village
(jointly with Kisenbaru JHS)
Lecturer Dr. Alexander Mikeyhev



Faculty Lecture December 6, 2010

Venue Yamada Junior High School,
Onna Village
Lecturer Dr. Gordon Arbuthnott



Faculty Lecture January 30, 2011

Venue Osato Farming Environment
Improvement Center, Nanjo City
Lecturer Dr. Holger Jenke-Kodama



Faculty Lecture December 8, 2010

Venue Onna Junior High School,
Onna Village
Lecturer Dr. Bernd Kuhn



BOG Lecture February 8, 2011

Venue Okinawa Employers' Association
Lecturer Dr. Akito Arima



Science Talk with Nobel Laureate February 11, 2011

Venue/OIST Campus Lecturer/Dr. Torsten Wiesel



OIST Open House 2010 November 28, 2010

Venue/OIST Campus Participants 2,130



Local and Community Events



Maeganeku Dragon Boat Race June 15, 2010



Softball Game March 6, 2011





OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY GRADUATE UNIVERSITY

<http://www.oist.jp>

November 1, 2011

